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FINAL SCREENING SITE INSPECTION

DRUMCO DRUM DUMP

**EPA WORK ASSIGNMENT NUMBER 37-34-3JZZ
PROJECT NUMBER 3263-31
EPA DSN MD-401
FACILITY ID NUMBER MDD985386119**

**ARCS III PROGRAM
CONTRACT NUMBER 68-W8-0037**

NOVEMBER 1993

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FINAL
SCREENING SITE INSPECTION REPORT
OF
DRUMCO DRUM DUMP SITE

EPA DSN MD-408
FACILITY ID NO. MDD985386119
BALTIMORE, ANNE ARUNDEL COUNTY, MARYLAND

EPA WORK ASSIGNMENT NUMBER 37-34-3JZZ
CONTRACT NUMBER 68-W8-0037

HALLIBURTON NUS PROJECT NUMBER 3263-31
GANNETT FLEMING PROJECT NUMBER 28166

OCTOBER 22, 1993

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SECTION 1.0

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1.0 INTRODUCTION

1.1 AUTHORIZATION

Halliburton NUS Corporation (HNUS)/Gannett Fleming, Incorporated (GF) performed this work under United States Environmental Protection Agency (EPA) Contract Number 68-W8-0037. This report was prepared in accordance with requirements specified under Work Assignment Number 37-34-3JZZ for the Drumco Drum Dump (Drumco) Site located in Baltimore City, and Baltimore and Anne Arundel counties, Maryland.

1.2 SCOPE OF WORK

HNUS/GF was tasked to conduct a screening site inspection (SSI) of the subject site with available information.

1.3 SUMMARY

The Drumco Site is located south of Curtis Bay off Pennington Avenue in Baltimore and Anne Arundel counties. The site, which occupies approximately 14 acres of land that were used as a storage yard for drums awaiting recycling or reconditioning, is currently owned by George P. Garratt, III.

The subject site was used as a drum storage yard for Drumco, Incorporated (Drumco) located at 1427 Bank Street in Baltimore City, Maryland, which recycled and reconditioned steel, poly, and fiberboard drums. In 1985, Drumco's owner, Mr. Garratt, began using his property located off Pennington Avenue as a storage yard for drums awaiting recycling or reconditioning. The Maryland Department of the Environment (MDE) Hazardous Waste Enforcement Division, Resource Conservation and Recovery Act (RCRA) inspectors issued Drumco three site complaints between July 1988 and August 1989 concerning improper storage of controlled hazardous substances at the 1427 Bank Street facility. Drums containing hazardous waste were illegally transported, stored, abandoned, and disposed at the subject site.

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In response to several complaints of hazardous materials being stored onsite, MDE inspected the storage site in September 1990. A trailer containing drums that were leaking caustic materials was discovered during that inspection. Approximately 34 drums were removed offsite by MDE. After several more inspections of the site, MDE requested the assistance of EPA.

EPA inspected the site and determined that it presented a direct contact threat to humans, a fire hazard, and a potential threat for the release of additional hazardous substances. In July 1991, EPA mobilized and began a removal action. A total of 23,733 drums were removed from the site; 5,544 contained material. All drums were sampled, and 3,784 were found to contain a regulated waste. The drums were segregated by contents and then classified as corrosive liquid acid or base; corrosive solid acid or base; oxidizing liquid or solid; flammable liquid or solid; flammable liquid/oxidizer; or otherwise regulated material, solid or liquid.

As a result of visible drum leakage, soil samples were collected. The site was divided into 12 areas, and composite soil samples were collected from each area. Only two areas indicated the presence of contamination. Area 7 soil sample results revealed extractable organic halides (EOX) (850 parts per million [ppm]), and Area 9 results revealed leachable chromium (3.29 ppm). Soil was excavated from these two areas, and the areas were regraded with clean fill and seeded to eliminate the potential for threat to humans from direct contact or ingestion.

The EPA removal action activities were completed on May 28, 1992. HNUS/GF conducted an SSI reconnaissance on April 14, 1993. No samples were collected at that time.

Residents within the study area obtain their potable water from two public water suppliers.

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SECTION 2.0

2.0 SITE DESCRIPTION AND HISTORY

2.1 LOCATION

The Drumco Site is located approximately one-quarter mile south of Curtis Bay off Pennington Avenue in Baltimore and Anne Arundel counties, Maryland (Figure 2-1). The site coordinates are 39° 12' 45" north latitude, and 76° 35' 30" west longitude. The site can be located on the United States Geological Survey (USGS) Curtis Bay, Maryland, quadrangle topographic map by measuring 6.5 inches south and 4.75 inches east of the northwestern corner.^(1, 2)

2.2 SITE LAYOUT

The approximately 14-acre site is currently an abandoned field with various piles of waste debris. Bordering the site to the south is Cabin Branch Creek, to the east are railroad tracks and a rendering plant, to the west are wetlands, and to the north is the closed City of Baltimore Pennington Avenue Landfill (Figure 2-2). Two waste piles are located in the southeastern corner, one waste pile is located in the southwest, and one waste pile is in the northeastern corner of the site. The property is partially fenced, thereby allowing unrestricted vehicle access.^(2, 3)

Waste pile (WP)-1 is approximately 10 feet in diameter and 5 feet high, consisting of concrete rubble and drum lids. WP-2 is approximately 20 feet in diameter and 20 feet high, consisting of wooden skids, drum lids, empty plastic drums, several empty 55-gallon steel drums, and tires. WP-3 is approximately 20 feet in diameter and 5 feet high, consisting of several hundred drum lids, drum rings, and tires. WP-4 is approximately 20 feet in diameter and 25 feet high, consisting of road construction rubble, macadam slabs, drum lids, and iron rods. Stained soil is located southwest of WP-4, consisting of an approximately 3-foot-diameter area of black to red unvegetated soil.⁽³⁾

The layout of the subject site prior to EPA removal action was not documented. Drums were stored haphazardly and randomly throughout the 14-acre site.⁽³⁾



FIGURE 2-1



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2.3 OWNERSHIP HISTORY

The Drumco Site was owned by the South Baltimore Harbor and Improvement Company prior to 1920. In 1920, the site was sold to the Charles S. Walton and Company, Incorporated. In 1953, the property was sold to the David Garratt and Sons Company, David Garratt, George Garratt, Jr., and Gordon Garratt. During the 1970s, the three Garratt brothers died and decreed their ownership of the site to their heirs (Figure 2-3). The current owners of the site are George P. Garratt, III, David G. Garratt, Zuttermeister et al. (which includes Emma Zuttermeister, Amy Goyne, June Walmsley, Doris Schaumberg, Margaret Hinton, Richard Williams, and Robert Williams).⁽⁴⁾

George P. Garratt, III purchased the interest of his brother, David G. Garratt in 1985; however, George P. Garratt failed to have a deed signed. From 1985 until 1991, David G. Garratt was not aware that his name still appeared on the property deed. George P. Garratt, III attempted to purchase the interests of Zuttermeister et al. but was unable to contact all the owners. George P. Garratt used the site as if he had 100 percent ownership.^(4, 5)

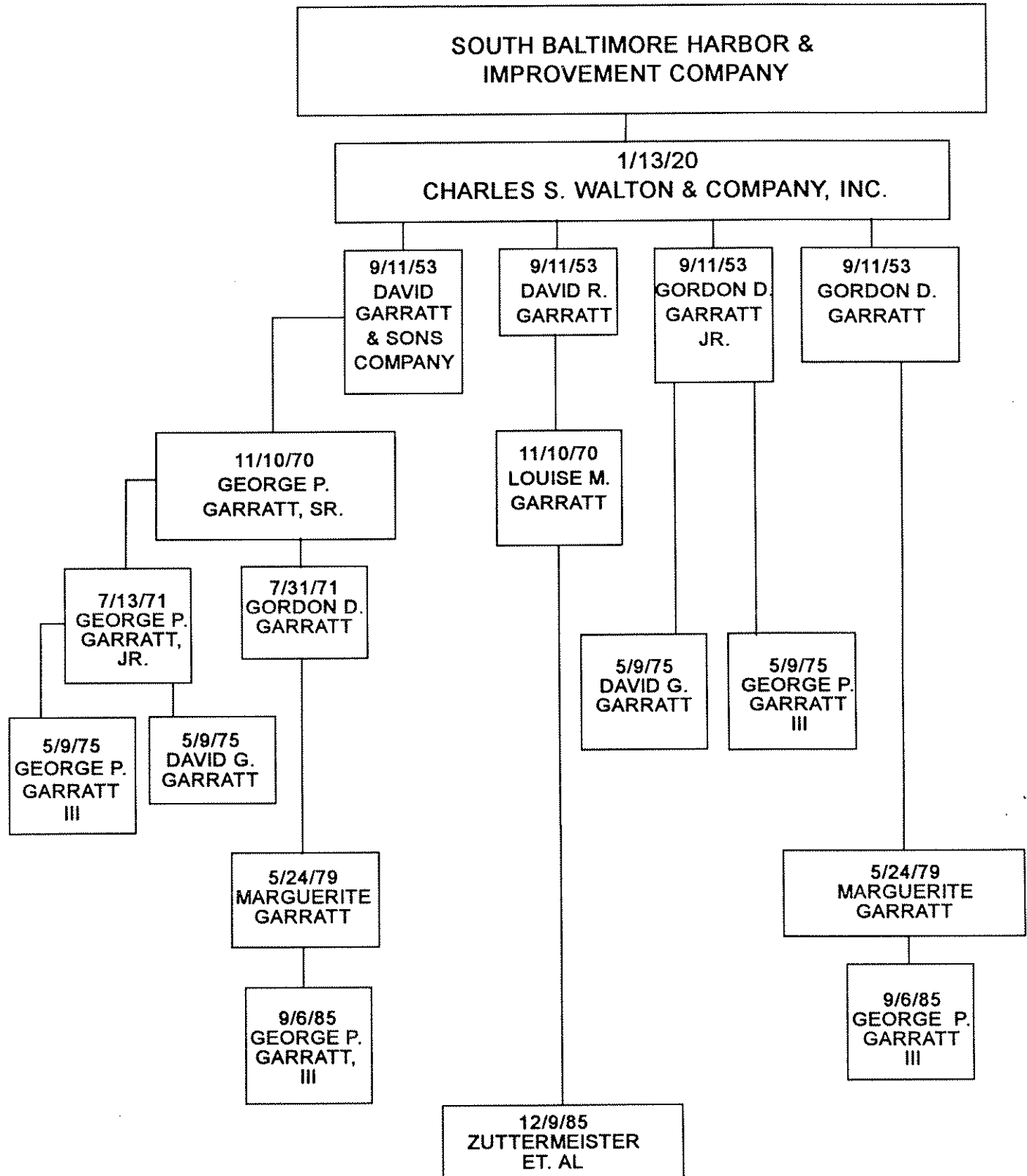
2.4 SITE USE HISTORY

George P. Garratt, III owned Drumco, Incorporated. Drumco operated a fiberboard drum reconditioning facility at 1427 Bank Street in Baltimore City. In 1983, Mr. Garratt expanded the business into recycling and reconditioning of steel, poly, and fiberboard drums. As part of Drumco's industrial process, residual contents of old drums were emptied into new drums: a conglomeration of substances were contained in single drums. The empty drums were placed into a submerger filled with a caustic liquid that stripped old paint and removed any material that was caked inside the drum.^(2, 5)

Mr. Garratt began using the Drumco Site in late 1985 to store drums awaiting recycling or reconditioning. After receiving several complaints of hazardous materials being stored onsite, MDE inspected the storage site in September 1990. A trailer housing drums that were leaking caustic materials was discovered during that inspection. State contingency funds were used to remove the caustic drums for proper disposal offsite.⁽⁵⁾

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FIGURE 2-3
OWNERSHIP HISTORY



* THE DATE INDICATED IN EACH BOX IS THE DATE OF THE OWNERSHIP TRANSFER

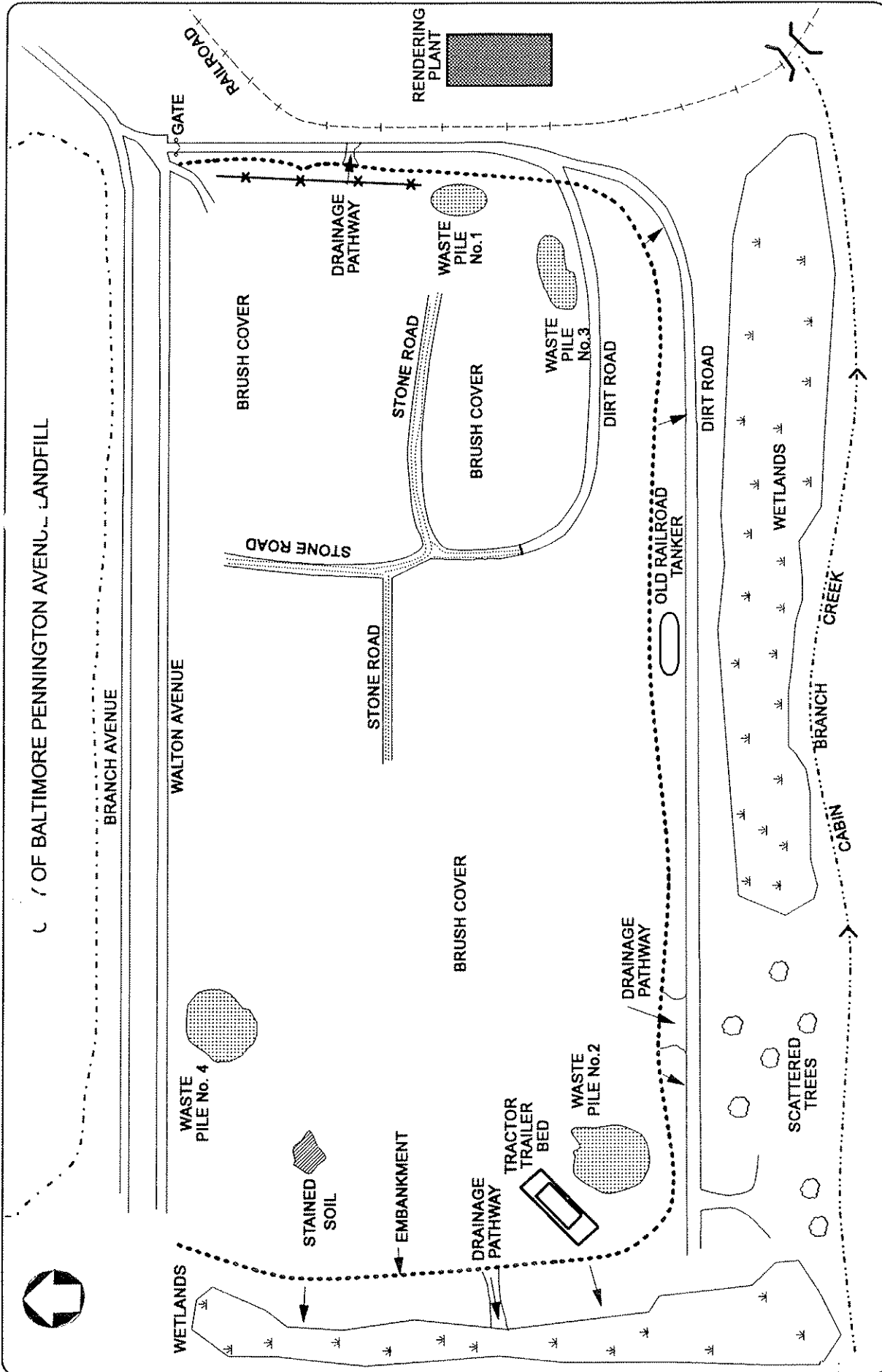


FIGURE 2-2

SITE SKETCH
DRUMCO DRUM DUMP
BALTIMORE, MARYLAND
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After several more site visits, MDE requested assistance from EPA. A removal assessment was conducted in April 1991 by the EPA Region III Superfund Removal Branch. Drums labeled as flammable liquids, corrosives, methylene chloride, trichloroethane, and acetone were found scattered throughout thousands of unlabeled drums. The site was determined to be a direct contact threat to humans, a fire hazard, and a potential threat for additional releases of hazardous substances from the drums. In July 1991, EPA began a removal action at the site. Drum removal and site cleanup were completed in May 1992. The site is not currently in use.^(3, 6, 7)

No information is available as to the type of operations that took place onsite before Drumco used the site for drum storage.⁽²⁾

2.5 PERMIT AND REGULATORY ACTION HISTORY

The MDE/Hazardous Waste Enforcement Division (HWED) Resource Conservation and Recovery Act (RCRA) inspectors issued Drumco three site complaints between July 1988 and August 1989 for improper storage of controlled hazardous substances at the 1427 Bank Street facility in Baltimore City. The controlled hazardous substances included rinse wastes, generated from rinsing drums after submerging, and spent submerging fluids. On November 8, 1989, MDE/HWED issued Drumco an Administrative Consent Order requiring the company to properly dispose of rinse wastes and spent submerging fluids.⁽²⁾

After receiving several complaints of hazardous materials being stored at the Drumco Site, MDE Hazardous and Solid Waste Management Administration (HSWMA) inspected the site on September 25, 1990. A trailer containing drums that were leaking a crystalline substance was found onsite. MDE also noted evidence of soil contamination caused by drum spillage in the storage yard. Six drums were sampled for ignitability and corrosivity. Results from samples of drum contents revealed ignitable, corrosive, and toxic materials. The contents of the drums were consistent with the rinsing waste from the Baltimore City facility. When the drums were discovered, Drumco was under the Administrative Consent Order that was issued on November 8, 1989. Drumco did not have a permit to store, abandon, or dispose of any controlled hazardous substances at the site. Mr. Garratt was advised to clean up the storage yard.^(2, 8)

Inspections by MDE on January 7 and 12, 1991, revealed that the site contained several hundred 55-gallon drums of material scattered among thousands of empty drums. Mr. Garratt acknowledged his responsibility for transporting, storing, abandoning, and disposing of hazardous substances without a permit. On January 21, 1991, MDE issued a formal complaint and order to Drumco for violations of Maryland water control and solid waste management laws. Mr. Garratt was sentenced to 90 days in jail and was fined \$50,000 for violations of Maryland environmental laws.

In February and March 1991, MDE/HWED conducted additional inspections in response to a Drumco employee's report that there were approximately 200 hazardous waste drums hidden in the storage yard. In March 1991, samples were collected from six drums that could be accessed in three drum piles. Four drums were determined to be multilayered flammable liquids and one drum was corrosive.⁽²⁾

MDE requested EPA assistance, and on April 1, 1991, a removal assessment by EPA Region III Superfund Removal Branch was performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 Code of Federal Regulations (CFR) 300. During the removal assessment, it was determined that the site presented a direct contact threat to humans, a fire hazard, and a potential threat for additional releases of hazardous substances from the drums. On June 7, 1991, the EPA regional administrator authorized funding to mitigate the threat the site posed to the environment and public health.^(2, 6)

On July 1, 1991, EPA, the EPA Technical Assistance Team (TAT), and Environmental Technology, Incorporated (ETI) mobilized to the site for removal activities. ETI was selected as the Emergency Removal Contracting Service (ERCS) to supply manpower and equipment for removal and cleanup activities. Site work was completed on May 28, 1992. A total of 23,733 drums were removed from the site; 5,544 were determined to contain material. Drum sampling and field hazard classification were performed. Drum sampling analyses included Toxicity Characteristic Leaching Procedure (TCLP) volatiles, TCLP semivolatiles, TCLP metals, TCLP phenols, TCLP pesticides, oil and grease, pH, ignitability, flash point (FP), polychlorinated biphenyls (PCBs), and cyanide. Compatibility analyses included reactivity, solubility, pH, ignitability, cyanide spot test, sulfide spot test, peroxide spot test, oxidizers, and chloride. Substances were classified as corrosive liquid acid or base; corrosive solid acid

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or base; flammable liquids or solids; oxidizing liquids or solids; flammable liquid/oxidizer; and other regulated material, solid or liquid. The number of drums discovered onsite in the various hazard classifications is as follows:

•	Corrosive liquid acid	—	195
•	Corrosive liquid base	—	175
•	Corrosive solid acid	—	1
•	Corrosive solid base	—	49
•	Oxidizing liquids	—	35
•	Oxidizing solids	—	4
•	Flammable liquids	—	229
•	Flammable solids	—	11
•	Flammable liquid/oxidizer	—	7
•	Other regulated material, solid	—	12
•	Other regulated material, liquid	—	3,066

Thirty-one drums were also found to contain oil, oily water, or oil sludge. The remaining 1,729 drums of material contained unregulated materials.⁽⁷⁾

Because of the leaking drums observed throughout the site, soil samples were collected using an unbiased grid soil sampling pattern and were analyzed for RCRA-regulated contaminants. The site was divided into 12 areas, and one composite sample was collected from each area. Each composite soil sample consisted of 13 individual soil samples taken from within each area.⁽⁸⁾

The MDE HSWMA performed a preliminary assessment of the subject site in December 1992.⁽²⁾

HNUS/GF performed an SSI reconnaissance on April 14, 1993. Based on file information and the results of the site reconnaissance, it was determined by EPA that an SSI report would be prepared based on available information.⁽³⁾

2.6

REMEDIAL ACTION TO DATE

A September 26, 1990, inspection by MDE HSWMA revealed a trailer containing leaking 55-gallon drums. A litmus paper test of the leaking substance revealed that it was extremely alkaline. Six drum samples were collected in March 1991 and analyzed for ignitability and corrosivity. Four of the drums contained multilayered flammable liquids, one drum contained corrosive materials, and the remaining drum did not exhibit the characteristics of flammability or corrosivity. MDE contracted A&A Environmental to remove the contaminated drums from the site. Removal operations took place on September 27 and 29 and October 1 and 4, 1991. During the October removal activities, an additional 30 drums containing hazardous materials were discovered and disposed properly.⁽²⁾

On July 1, 1991, EPA, TAT, and ETI mobilized to the Drumco Site to begin removal and cleanup activities. A total of 23,733 drums were discovered onsite; 5,544 contained material. Empty steel drums were transported to a local drum recycler, and empty fiber drums were disposed at a local incinerator.⁽⁷⁾

All drums containing material were sampled and classified based on the characteristics of the substance in each drum. Drums containing hazardous substances were classified as corrosive liquids or solids, flammable liquids or solids, flammable liquid/oxidizers, oxidizing liquids or solids, and otherwise regulated liquid or solid material. Drums exhibiting these characteristics were bulked or transferred into shippable 55- or 30-gallon drums according to the appropriate hazard class. Oil/water mixtures were consolidated into a 500-gallon poly tank for separation. Once separated, the water and oil were bulked into individual drums for disposal. All aqueous substances that did not exhibit the characteristics of the above-mentioned hazard classifications were bulked together into static tank trucks for disposal.⁽⁷⁾

As a result of the leaking drums observed throughout the site, soil samples were collected using a grid pattern and analyzed for RCRA-regulated contaminants. The site was divided into 12 grid areas. One composite sample was analyzed from each area. Soil analyses revealed two areas of onsite contamination. Area 7, a 200-foot by 200-foot area in the southwestern section of the site, contained 850 ppm of EOX. Area 9, a 100-foot by 100-foot area in the southeastern section of the site, contained 3.3 ppm of leachable chromium. Approximately 430 tons of soil were excavated from these two areas and transported offsite for disposal at

a RCRA-approved landfill. Soil sample results after the removal of soil from Area 7 revealed that the EOX concentration was reduced from 850 ppm to 8 ppm. Soil sample results from Area 9 after soil removal revealed an increase of chromium from 3.29 ppm to 3.8 ppm. Because the RCRA-regulated limit for chromium is 5.0 ppm and the area was capped with clean fill, which mitigated the ingestion or direct contact threat, no further removal activities were performed on Area 9. Both areas were regraded and seeded.⁽⁷⁾

The contents of the drums were disposed at various facilities. Liquid wastes were disposed at Clean Harbors of Baltimore, Clean Harbors of Braintree, and Petrochem Processing, Incorporated. Solid wastes were disposed at Michigan Disposal and Laidlaw Environmental Services, Incorporated. Otherwise regulated liquid material was disposed at Clean Harbors of Baltimore, Clean Harbors of Braintree, and Dupont Chambers Works. The excavated contaminated soil was disposed at Laidlaw Environmental Services, Incorporated.⁽⁷⁾

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SECTION 3.0

3.0 ENVIRONMENTAL SETTING

3.1 WATER SUPPLY

Residents in the 4-mile-radius study area rely on public and private water supplies, using groundwater sources for potable water.

Two public water suppliers serve portions of the study area: AACDU supplies water to residents in the southern and western portions of the study area, and BCDPWB supplies water to residents in the northern and eastern portions of the study area.^(9, 10)

The GBD of AACDU is responsible for serving residents in the study area. The GBD utilizes 21 groundwater wells to serve approximately 20,000 accounts. None of the GBD wells are located within the 4-mile-radius study area. The GBD also purchases water from BCDPWB when needed.⁽⁹⁾

BCDPWB supplies water to residents located in the northern portion of the study area. Approximately 404,522 accounts are supplied by BCDPWB from two surface water intakes. The (b) (9) supplies water to the Montebello filtration plant, which serves the study area. The (b) (9) supplies water to the Ashburton filtration plant, which does not supply water to the study area. The (b) (9) is located approximately (b) (9) of the site; the (b) (9) is located approximately (b) (9) of the site. Neither reservoir receives surface drainage from the site.⁽¹⁰⁾

Approximately 121 people are not serviced by public water and are assumed to maintain private domestic wells for their water supply. This number was derived from a domestic well count from the MDE Residential Sanitation Program and an average of 2.7 persons per household for Anne Arundel County. The closest private home well is located approximately (b) (9) of the site and is reported to be 153 feet deep.⁽²⁾

The population dependent on groundwater sources for potable water within the study area is as follows:

Radius (miles)	Population
0 to 1/4	0
1/4 to 1/2	0
1/2 to 1	8
1 to 2	8
2 to 3	43
3 to 4	62

No surface water intakes were identified within 15 miles downstream of the site.⁽¹⁾

3.2 SURFACE WATER

Onsite surface water drainage from the site eventually flows into Cabin Branch Creek via onsite drainage pathways that flow into adjacent wetlands or along drainage swales. Cabin Branch Creek is located approximately 250 feet south of the site and flows approximately 0.9 mile into Curtis Bay. Curtis Bay flows approximately 2.7 miles into the Patapsco River. The Patapsco River flows south approximately 8.5 miles into the Chesapeake Bay. The remainder of the 15-mile downstream target distance flows south on the Chesapeake Bay. Cabin Branch Creek and Curtis Bay are classified as Class IP waters: water contact recreation and protection of aquatic life. The Patapsco River is classified as a Class IV water: recreational trout water. The Chesapeake Bay is classified as a Class II water: shellfish harvesting water.^(1, 2, 11)

Wetlands are found within the study area; they are located adjacent to the site to the west and south. A total of approximately 17.6 wetland frontage miles are located along the 15-mile downstream target distance. The majority of these wetlands are classified as estuarine, intertidal, beach bar.⁽²⁾

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3.3 HYDROGEOLOGY

A review of published literature was conducted as part of the site inspection to determine surface and subsurface geologic conditions, soil character, and nature and occurrence of groundwater.

3.3.1 Geology

The Drumco Site lies in the Atlantic Coastal Plain Physiographic Province. This province is underlain by a wedge-shaped mass of sediments of Cretaceous, Tertiary, and Quaternary age that rest unconformably on sloping crystalline basement rock. Sediments beneath the project area are approximately 420 feet thick. Coastal Plain sediments consist of unconsolidated clay, silt, and sand and gravel. The sediments dip gently (about 80 feet per mile) in a southeastward direction and thicken from the Fall Line (the western boundary of the Coastal Plain) west of the site to the Atlantic Ocean to the east (Figure 3-1).⁽¹²⁾

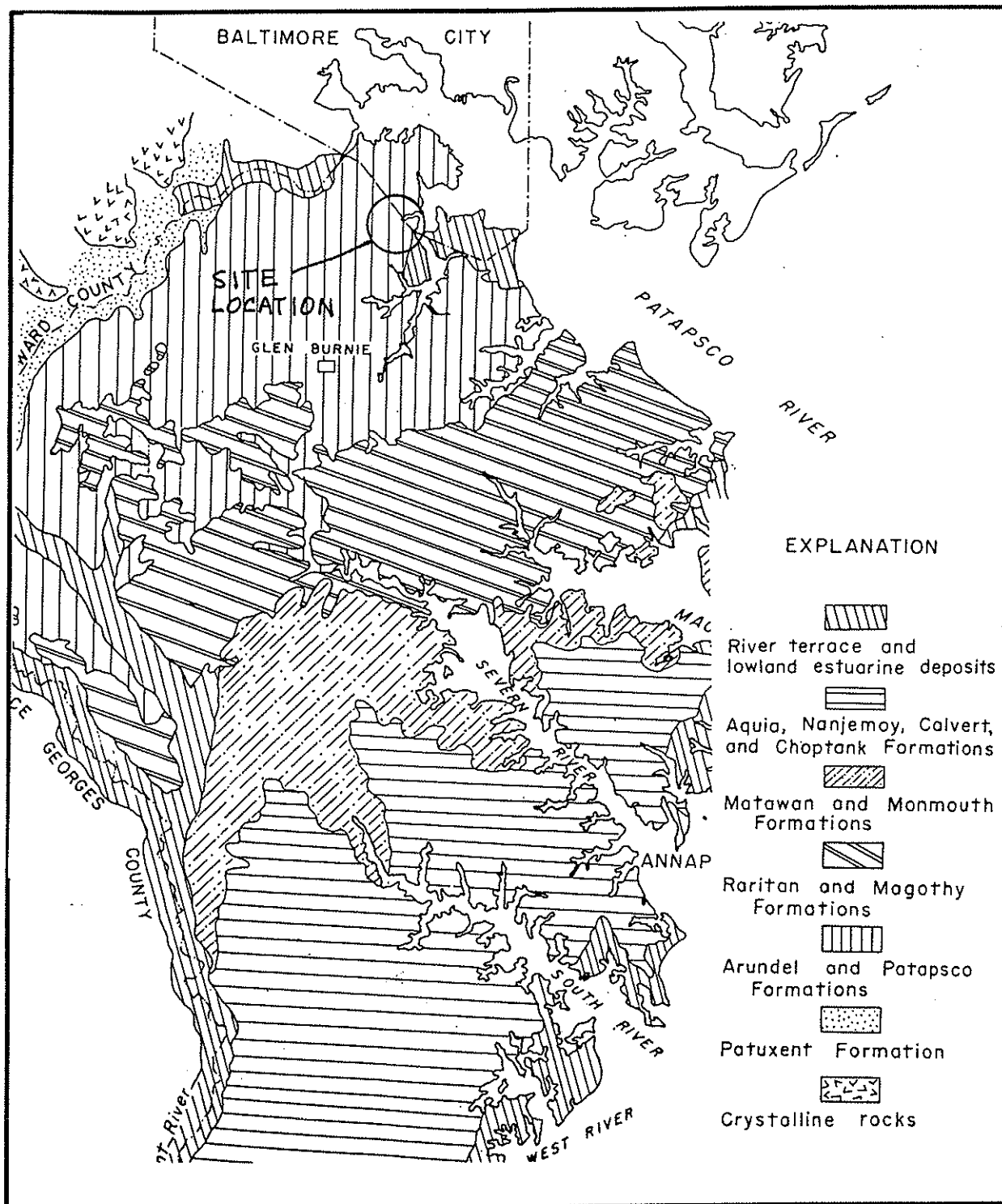
In the project area, the Coastal Plain sediments are mainly within the lower Cretaceous Potomac Group. The Potomac Group is represented in this area by the Patuxent, Arundel, and Lower Patapsco formations.⁽¹²⁾

The Patuxent Formation overlies the bedrock and forms the basal unit of the Coastal Plain sediments. It consists of sand, silt, and clay and is approximately 150 feet thick. The top of the Patuxent Formation lies at a depth of approximately 250 feet below the ground surface. The Arundel Formation overlies the Patuxent Formation and consists of clay. It is approximately 150 feet thick, and the top of the Arundel Formation lies at a depth approximately 125 feet below the ground surface. The Lower Patapsco Formation overlies the Arundel Formation and directly underlies the site. The bottom of the Lower Patapsco consists mostly of sand, and the top of the Lower Patapsco consists of mostly clay. This unit is approximately 125 feet thick underlying the site.^(12, 13)

3.3.2 Soils

The Drumco Site is underlain by soils identified by the United States Soil Conservation Service (SCS) to include approximately 80 percent cut-and-fill land, approximately 10 percent Othello

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FIGURE 3-1

SCALE
0 1 2 3 4 Miles



GANNETT FLEMING, INC.
HARRISBURG, PENNSYLVANIA

GEOLOGIC MAP
DRUMCO DRUM DUMP
ANNE ARUNDEL CO., MARYLAND

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silt loam, and approximately 10 percent tidal marsh. The cut-and-fill land consists of miscellaneous land types in which the soil has been so severely disturbed or altered that it cannot be identified by soil series. Information on the engineering properties is not available from the SCS. The Othello silt loam consists of poorly drained, highly silty soils that have mottled subsoil and occur chiefly at low elevations. These soils typically have depths to seasonal high water tables ranging from zero to 1 foot below grade and have permeabilities ranging from 0.2 to 2.0 inches per hour. The tidal marsh consists of soils that are covered regularly by tidal waters. Soil material ranges from sand to clay and is mucky to peaty in some places. Information on the engineering properties is not available from SCS.⁽¹⁴⁾

3.3.3 Groundwater

The Patuxent and Lower Patapsco formations contain the best aquifers within the project areas. Groundwater within aquifers comprised of unconsolidated sediments occurs within the interstitial spaces between grains.^(12, 13)

Wells within the Patuxent aquifer are reported by Mack and Achmad (1986) to yield groundwater ranging from 1 to 2 million gallons per day (mgd). Recharge to the Patuxent aquifer occurs along its outcrop area approximately 5 miles west of the site. Mack (1962) has estimated the total groundwater recharge to the Patuxent aquifer based on its outcrop area to be 60 mgd. The Arundel Formation is the upper confining unit for the aquifer within the Patuxent Formation.⁽¹³⁾

The Patapsco Formation contains an aquifer that was reported by Mack (1962) to yield 0.5 to 2.0 mgd. Groundwater yields from the Lower Patapsco aquifer within the project area are likely lower than the 0.5 mgd reported because much of the aquifer is absent from the geologic column in this area. The Patapsco aquifer is likely to be under water-table conditions, although the clayey portion of the Lower Patapsco, if present in this area, may cause some confined conditions within the aquifer.⁽¹³⁾

3.4 CLIMATE AND METEOROLOGY

The climate of the area is based on climatological data for Laurel, Maryland, located approximately 39 miles southwest of the site. The mean annual temperature for the area is

55.9 degrees fahrenheit. January is the coldest month, with a mean temperature of 33.4 degrees fahrenheit. July is the warmest month, with a mean temperature of 77.2 degrees fahrenheit. The mean annual precipitation is 41.87 inches. The mean annual lake evaporation is 36.5 inches. The net precipitation is 5.37 inches. The two-year, 24-hour rainfall is 3.4 inches.^(15, 16)

3.5 LAND USE

The Drumco Site is situated directly on the western city limit of Baltimore and extends into Anne Arundel County, Maryland. The surrounding area is primarily industrial. The closed Pennington Avenue Landfill is located 100 feet north of the site. A Baltimore City gas plant is located to the northeast, a meat rendering plant is located to the south, and a Hess oil terminal is located to the southwest of the site.^(1, 3, 7)

3.6 POPULATION DISTRIBUTION

Based on the known populations of the surrounding communities and a routine house count (2.7 persons per house) of the 4-mile-radius surrounding the site, the calculated population of the study area is as follows:^(1, 2)

Radius (miles)	Population
0 to 1/4	0
1/4 to 1/2	145
1/2 to 1	3,124
1 to 2	14,938
2 to 3	25,635
3 to 4	47,387

The total population within the 4 miles is 91,229.

3.7 CRITICAL ENVIRONMENTS

The swamp pink (*Helonias bullata*) is a federally threatened species that occurs in Anne Arundel County, Maryland. Two federally listed endangered birds are expected to be found as transient species in the study area: the bald eagle (*Haliaeetus leucocephalus*) and the peregrine falcon (*Falco peregrinus*).⁽¹⁷⁾

The closest wetland within the study area is approximately 250 feet south of the site. It is more than 5 acres and is listed as palustrine, emergent.⁽¹⁸⁾

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SECTION 4.0

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4.0 WASTE TYPES AND QUANTITIES

The Drumco Site was used as a storage yard for drums awaiting recycling or reconditioning. MDE initially inspected the site in September 1990 and discovered a trailer containing drums that were leaking caustic materials. Samples were collected in March 1991 from six drums and analyzed for ignitability and corrosivity. Sample results revealed that four drums contained multilayered flammable liquids and one drum contained corrosive material. The remaining drum did not exhibit the characteristics of flammability or corrosivity.⁽²⁾

As part of the EPA removal action, 23,733 drums were removed from the site. Of these drums, 5,544 were determined to contain material and were sampled. All like materials were bulked into new drums or tanks for disposal offsite. Section 2.5 identifies the major classifications of the bulked wastes. The bulked quantities and sample results of each classification of waste are described below.⁽⁷⁾

Corrosive Liquid Acids (CLA)—195 original drums were bulked into 44 drums for disposal. This waste classification was further subdivided into three disposal waste streams based on compatibility parameters. CLA Stream No. 1 included one multilayered drum that contained 84 percent water, 15 percent oil and grease, and less than 1 percent inert salts. CLA Stream No. 2 included 18 drums that contained 4 percent mixed acids (hydrochloric and sulfuric) and methyl ethyl ketone (340 ppm), with a pH less than 1. CLA Stream No. 3 included 25 drums that contained 2 percent mixed acids, with a pH of 3 to 4.⁽⁷⁾

Corrosive Liquid Base (CLB)—175 original drums were bulked into 64 drums for disposal. This waste classification was further subdivided into five disposal waste streams based on compatibility parameters. CLB Stream No. 1 included seven drums that contained lead (8.7 ppm), carbon tetrachloride (1.59 ppm), and tetrachloroethene (1.92 ppm), with a composite pH of 13.4. CLB Stream No. 2 included 27 drums that contained lead (up to 9.1 ppm), with a composite pH of 13.4. CLB Stream No. 3 included one drum that contained 4 percent sodium and potassium hydroxide, with a pH of 13.7. CLB Stream No. 4 included eight drums that contained 20 percent sodium and potassium hydroxide, 10 percent inert inorganics, and lead (80 ppm), with a composite pH of 13.1. CLB Stream No. 5 included 21 drums that contained 2 percent sodium and potassium hydroxide, with a composite pH of 10.1.⁽⁷⁾

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Corrosive Solid Acid (CSA)—one original drum contained a CSA substance that, when mixed with water, had a pH of 2.⁽⁷⁾

Corrosive Solid Base (CSB)—49 original drums contained CSB material that contained chromium (9.7 ppm) and lead (40 ppm), with a pH of 13. Lime was mixed with the material to solidify any free-flowing liquid. Approximately 23 tons of CSB material were removed from the site.⁽⁷⁾

Oxidizing Liquid (OXL)—35 original drums were bulked into 12 drums for disposal. This waste classification was further subdivided into six disposal waste streams based on compatibility parameters. OXL Stream No. 1 included one drum that contained 5 percent hydrochloric acid, chromium (60 ppm), cadmium (2.21 ppm), and lead (5.33 ppm), with a pH of 1.0. OXL Stream No. 2 included five drums that contained chromium (100 ppm) and trichloroethene (3.5 ppm). OXL Stream No. 3 included two drums that contained trichloroethene (3.43 ppm). OXL Stream No. 4 included one drum that contained 10 percent mixed acids and trichloroethene (3.5 ppm), with a pH of 1.0. OXL Stream No. 5 included one drum that contained lead (217 ppm). OXL Stream No. 6 included two drums that contained two percent sodium and potassium nitrate.⁽⁷⁾

Oxidizing Solids (OXS)—four original drums contained OXS material that had an FP greater than 160 degrees fahrenheit. These drums contained no RCRA-regulated material other than oxidizers. The oxidizing solids were deactivated by dissolving in water and solidifying with lime. This material was then reclassified as other regulated liquid material and was disposed under that classification.⁽⁷⁾

Flammable Liquids (FLA)—220 original drums were determined to contain ignitable liquids and were bulked into 84 drums for disposal. This waste classification was further subdivided into six disposal waste streams based on compatibility parameters. FLA Stream No. 1 included 28 drums with a high water content and a composite FP of 91 degrees fahrenheit; this stream contained tetrachloroethene (1.3 ppm), 1,2-dichloroethane (0.9 ppm), hexachlorobutadiene (0.6 ppm), and trichloroethene (0.5 ppm). FLA Stream No. 2 included 31 drums with low water content with a composite FP of 93 degrees fahrenheit; this stream contained benzene, tetrachloroethene, 1,2-dichloroethane, and trichloroethene. FLA Stream No. 3 included nine drums of paint waste that had a composite FP less than 72 degrees fahrenheit and contained

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lead and tetrachloroethene. FLA Stream No. 4 included six drums of paint sludges that contained lead (7.0 ppm) and tetrachloroethene (2.96 ppm). FLA Stream No. 5 included three drums of adhesive waste that had a composite FP of 89 degrees fahrenheit. FLA Stream No. 6 included one drum of halogenated solvents that contained 23 percent chloride, chloroform, and trichloroethene.

Flammable Liquid/Oxidizer (FL/OXL)—seven original drums were characterized as both flammable liquids and oxidizers. The waste stream contained lead (5.4 ppm), trichloroethene (16 ppm), and methyl ethyl ketone (1,100 ppm) and had a composite pH of 11 and a composite FP of 80 degrees fahrenheit.⁽⁷⁾

Flammable Solids (FS)—11 original drums were characterized as FS and were bulked into five new drums for disposal. Discrepancies between the laboratory analysis and original drum descriptions resulted in resampling, which revealed only one of the five new drums exhibited the characteristics of flammability.⁽⁷⁾

Otherwise Regulated Material, Liquid (ORML)—3,066 original drums were characterized as ORMLs. All of these drums were subdivided into the following categories:

- Wastewater—58,400 gallons of wastewater were transported offsite.
- Oil—31 drums of oil were transported offsite.
- Oil sludge—two drums of oil sludge were transported offsite. A composite sample revealed acetone (7,740 ppm), carbon tetrachloride (371 ppm), 1,1-dichloroethene (44.9 ppm), 1,2-dichloroethane (379 ppm), ethyl benzene (1,970 ppm), methyl ethyl ketone (962 ppm), styrene (1,200 ppm), tetrachloroethene (51.9 ppm), trichloroethane (3,240 ppm), trichloroethene (457 ppm), and xylene (3,000 ppm). The FP was less than 72 degrees fahrenheit.
- Oily water—28 drums of oily water were composited and analyzed. The analysis revealed lead (23.4 ppm), acetone (8,940 ppm), carbon tetrachloride (78.7 ppm), 1,1-dichloroethane (19.8 ppm), 1,2-dichloroethane (71.5 ppm),

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methyl ethyl ketone (2,510 ppm), tetrachloroethene (14.5 ppm), toluene (3,010 ppm), trichloroethene (40.2 ppm), and xylene (1,080 ppm).

As a result of the leaking drums observed throughout the site, composite soil samples were collected from 12 areas using a grid pattern. Only two areas indicated the presence of contamination. Sample results from Area 7 revealed EOX (850 ppm) contamination, and Area 9 revealed chromium (3.29 ppm). Soil was excavated from these two areas; 164 tons of soil was removed from Area 7 and 272 tons was removed from Area 9.⁽⁷⁾

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SECTION 5.0

5.0 FIELD TRIP REPORT

5.1 SUMMARY

On April 14, 1993, GF member (b) (4) and HNUS member (b) (4) performed an SSI reconnaissance of the Drumco Site. The weather during the inspection was clear with a high temperature of 75 degrees fahrenheit. Access to the site and permission to take photographs were granted by George Garrett, III, majority owner of the property.

No samples were collected during the site reconnaissance. Photographs were taken onsite (see Figure 5-1 and the photograph log in Section 5.4).

5.2 PERSONS CONTACTED

5.2.1 Prior to Field Trip

Mr. Michael Taurino
U.S. Environmental Protection Agency
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107-4431
(215) 597-3437

Ms. Arlene Weiner
Maryland Department of the Environment
Hazardous and Solid Waste Administration
2500 Broening Highway
Baltimore, Maryland 21224
(410) 631-3437

Mr. George P. Garrett, III
Site Owner
P.O. Box 1
Sykesville, MD 21784
(410) 549-6248

5.3 SITE OBSERVATIONS

- The photoionization detector (PID) background reading was 0.0 ppm. No readings above background were recorded.
- The radiation mini-alert was set at the $\times 1$ audio position. No readings above background were recorded.
- The site is currently inactive.

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- Four large waste piles were located onsite. WP-1 consisted of various debris and drum lids. WP-2 consisted of drum lids, plastic drums, a 55-gallon steel drum, and tires. WP-3 consisted of several hundred drum lids and seals and tires. WP-4 consisted of road rubble, drum lids, and iron rods.
- Stained soil was observed in the northwestern corner of the site.
- Areas 7 and 9 had a vegetated cover.

5.4 PHOTOGRAPH LOG

5.4 Photo Log



Photo No.1 Shows Cabin Branch Creek from the Curtis Bay looking west



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PHOTO'S NO. 2 & 3 PANORAMA SHOWING
THE SOUTHERN TOE OF THE AREA OF
CONCERN LOOKING NORTH.



PHOTO NO. 4 SHOWS DEBRIS PILE
LEFT FROM THE REMOVAL ACTION
LOOKING EAST.



PHOTO NO. 5 SHOWS DEBRIS PILE
LEFT FROM REMOVAL ACTION
LOOKING SOUTH.



PHOTO NO. 6 SHOWS DEBRIS PILE
LEFT FROM REMOVAL ACTION
LOOKING SOUTHWEST.

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PHOTO NO. 7 SHOWS STAINED SOIL LEFT
AFTER THE REMOVAL ACTION LOOKING
NORTH.



PHOTO NO. 8 SHOWS DEBRIS PILE LEFT
FROM THE REMOVAL ACTION LOOKING
NORTHWEST.



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Photo's 9 & 10 show shots 1 and 2 of a 4 shot
panorama of the site looking from south to
northwest



PHOTO'S 11 & 12 SHOWS PHOTO'S 3 & 4
OF A 4 SHOT PANORAMA OF THE SITE LOOKING
FROM SOUTH TO NORTHWEST.

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LIST OF FIGURES AND APPENDICES

FIGURE 1: Regional Location Map

FIGURE 2: County Location Map

FIGURE 3: Street Map

FIGURE 4: Site Sketch

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FIGURE 7: Geologic Map

FIGURE 8: Surface Water Migration Pathway

FIGURE 9: Wetlands Map

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APPENDIX B: Deed Search Data

APPENDIX C: Inspection Reports

APPENDIX D: First Removal Action Report

APPENDIX E: Complaint and Order

APPENDIX F: Inspection Reports

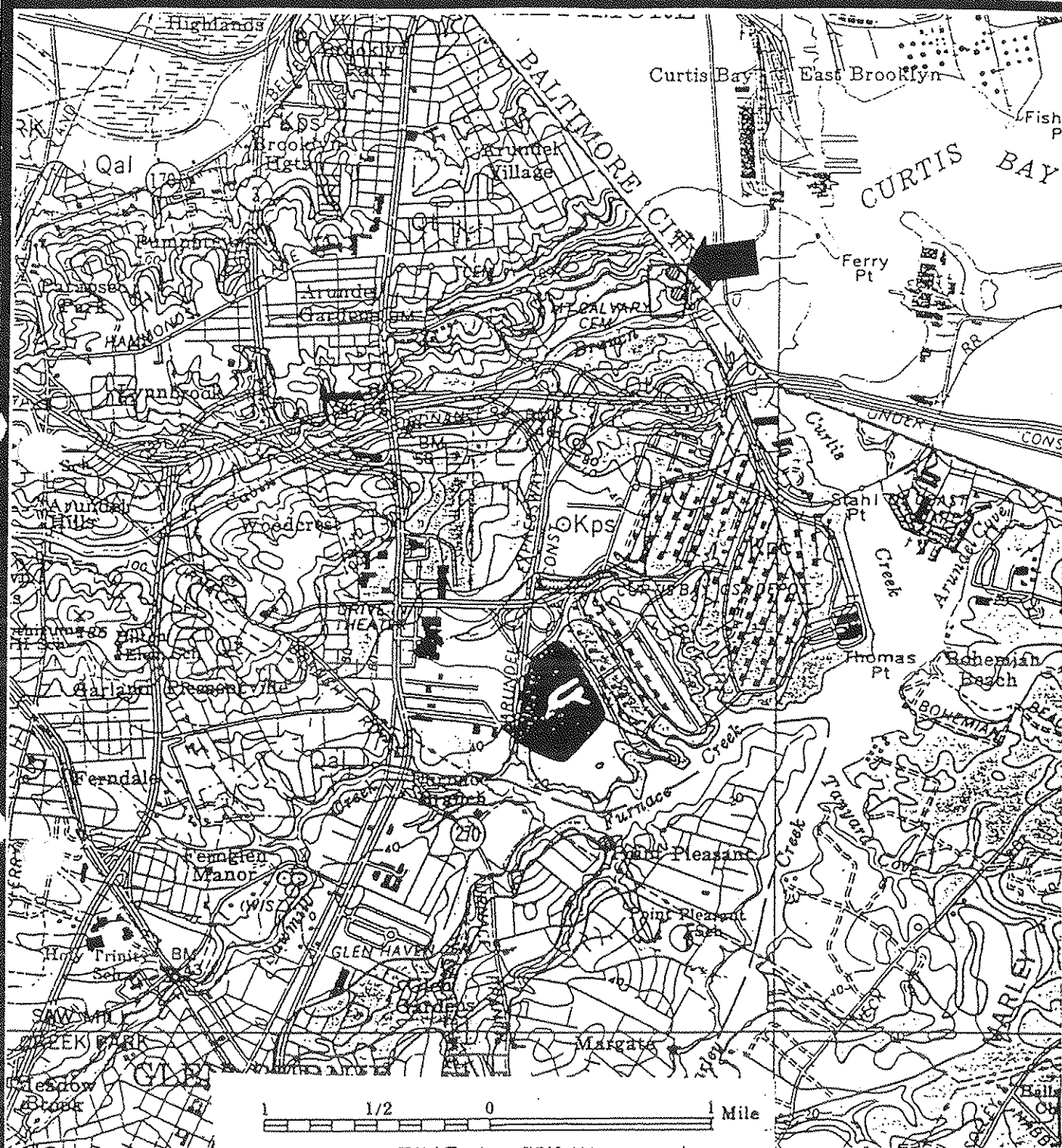
APPENDIX G: Drum Sampling Analytical Data Report

APPENDIX H: Removal Action Order

APPENDIX I: Soil Samples Analytical Results

GEOLOGIC MAP

FIGURE 7



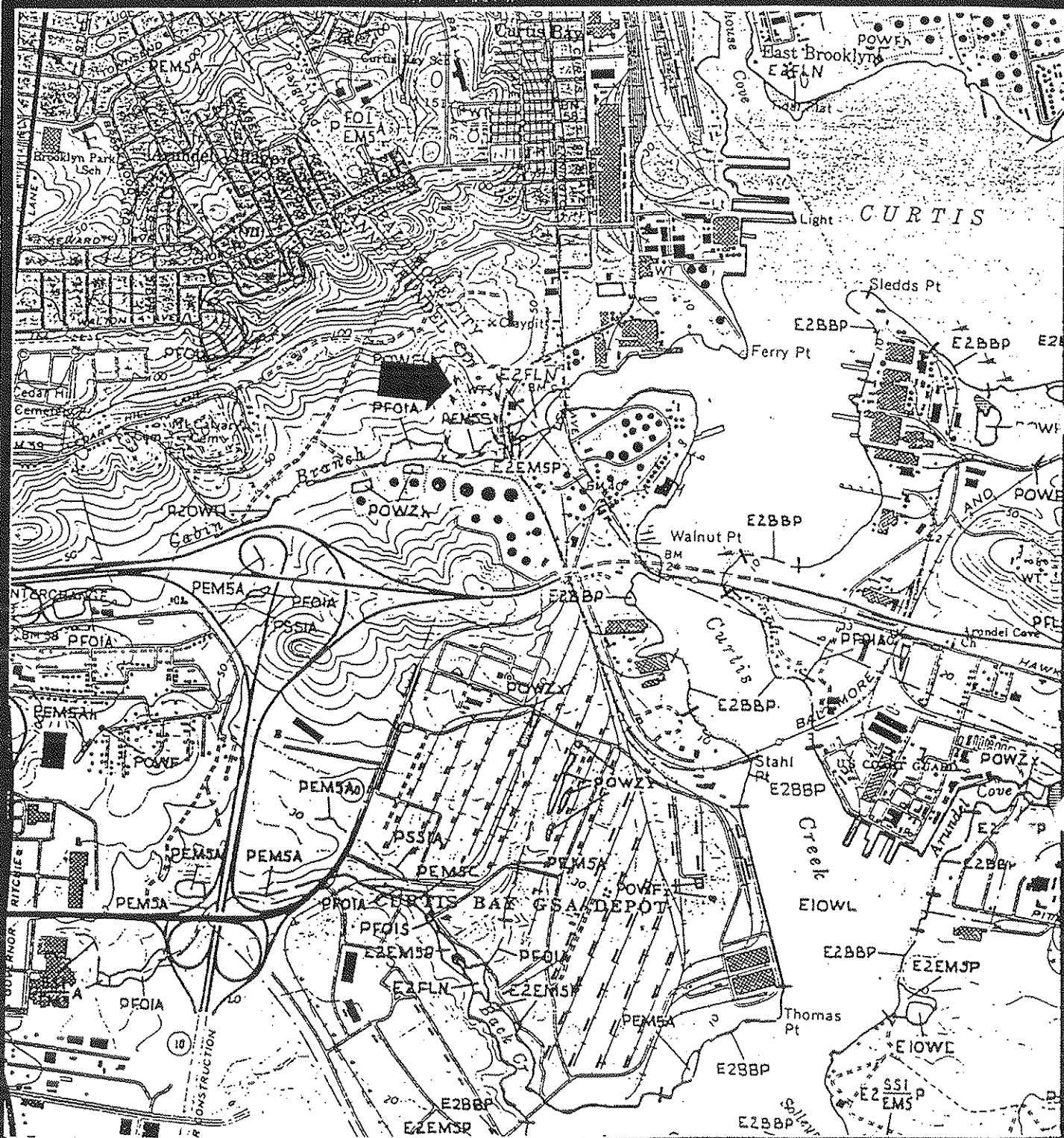
Qal - Quaternary Alluvium Kps - Potomac Group Sand (Patapsco Formation & Arundel Clay)
 Qt - Quaternary Terrace Deposits Kpc - Potomac Group Clay (Arundel Clay)

Geologic Map of Anne Arundel County, MD Dept. of Geology, Mines, & Water Resources, 1976



WETLANDS MAP

FIGURE 9



PFO1A - Palustrine Forested Broad-leaved Deciduous
 PEM5A - Palustrine Emergent Narrow-leaved Persistent

E2EM5P - Estuarine Emergent Narrow-leaved Persistent
 E2FLN - Estuarine Flat Narrow-leaved

National Wetlands Inventory, Fish and Wildlife Service, USDI, Curtis Bay Quadrangle, 1981



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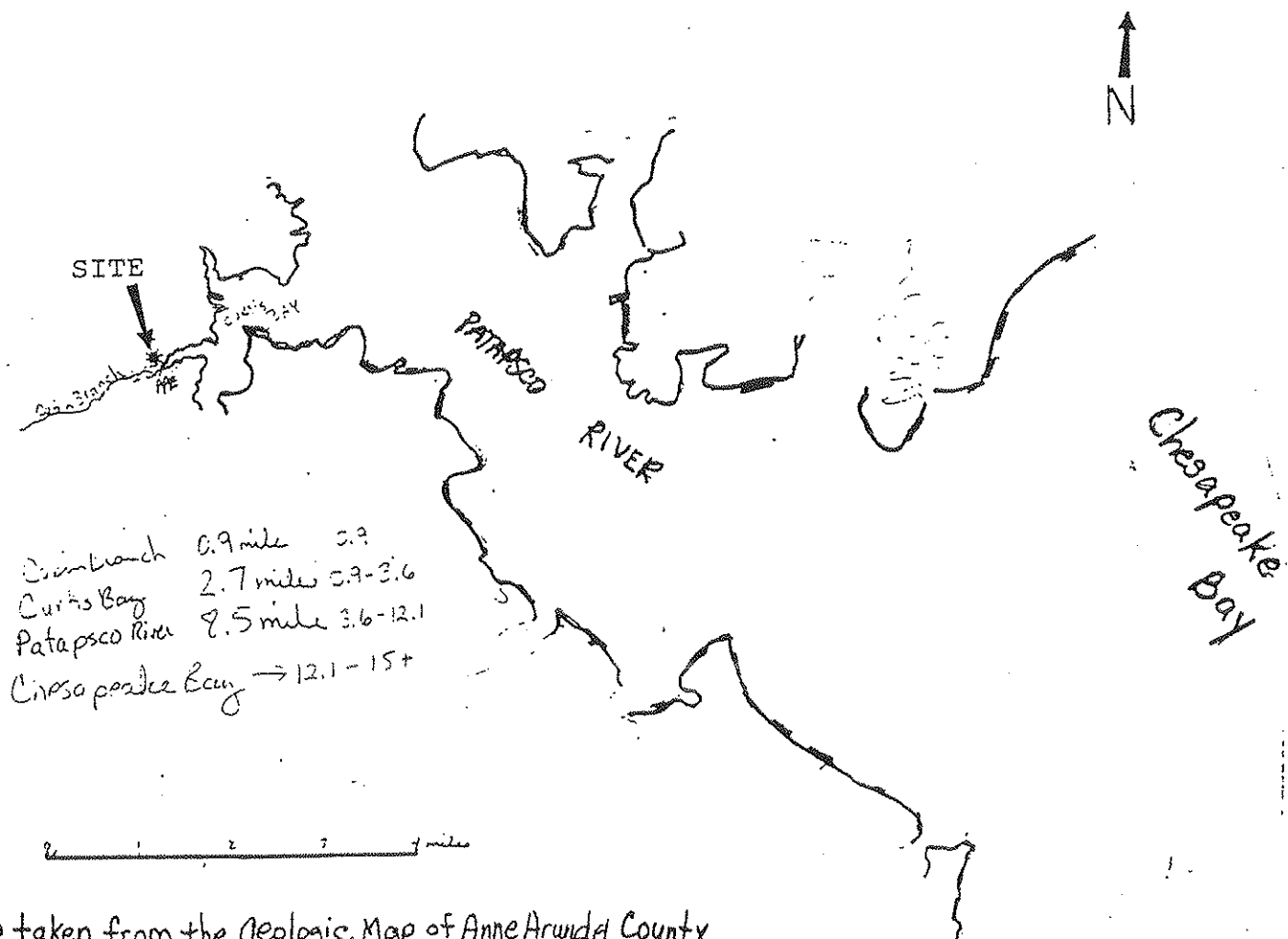
APPENDIX A:
TAX MAP

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SURFACE WATER MIGRATION ROUTE SKETCH

FIGURE 6



• taken from the Geologic Map of Anne Arundel County

- Palustrine - forested
- Palustrine - emergent
- Estuarine - Intertidal - flat
- Estuarine - Intertidal - beach

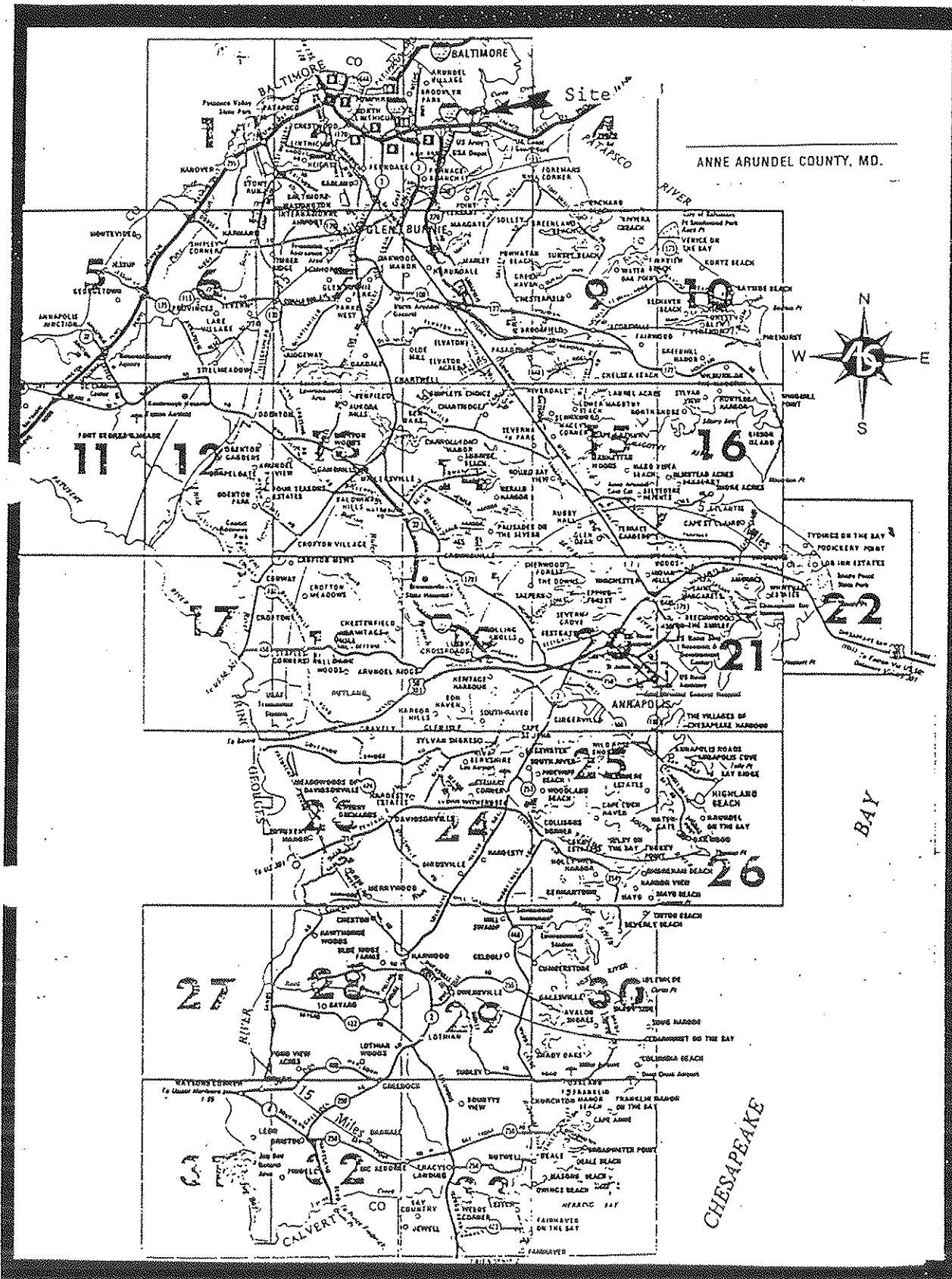
NOT TO SCALE

COUNTY MAP

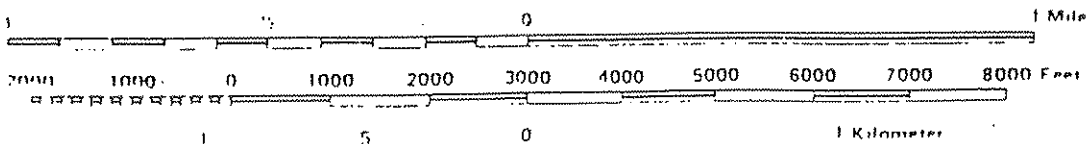
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FIGURE 2

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Scale 1" = 2,000'

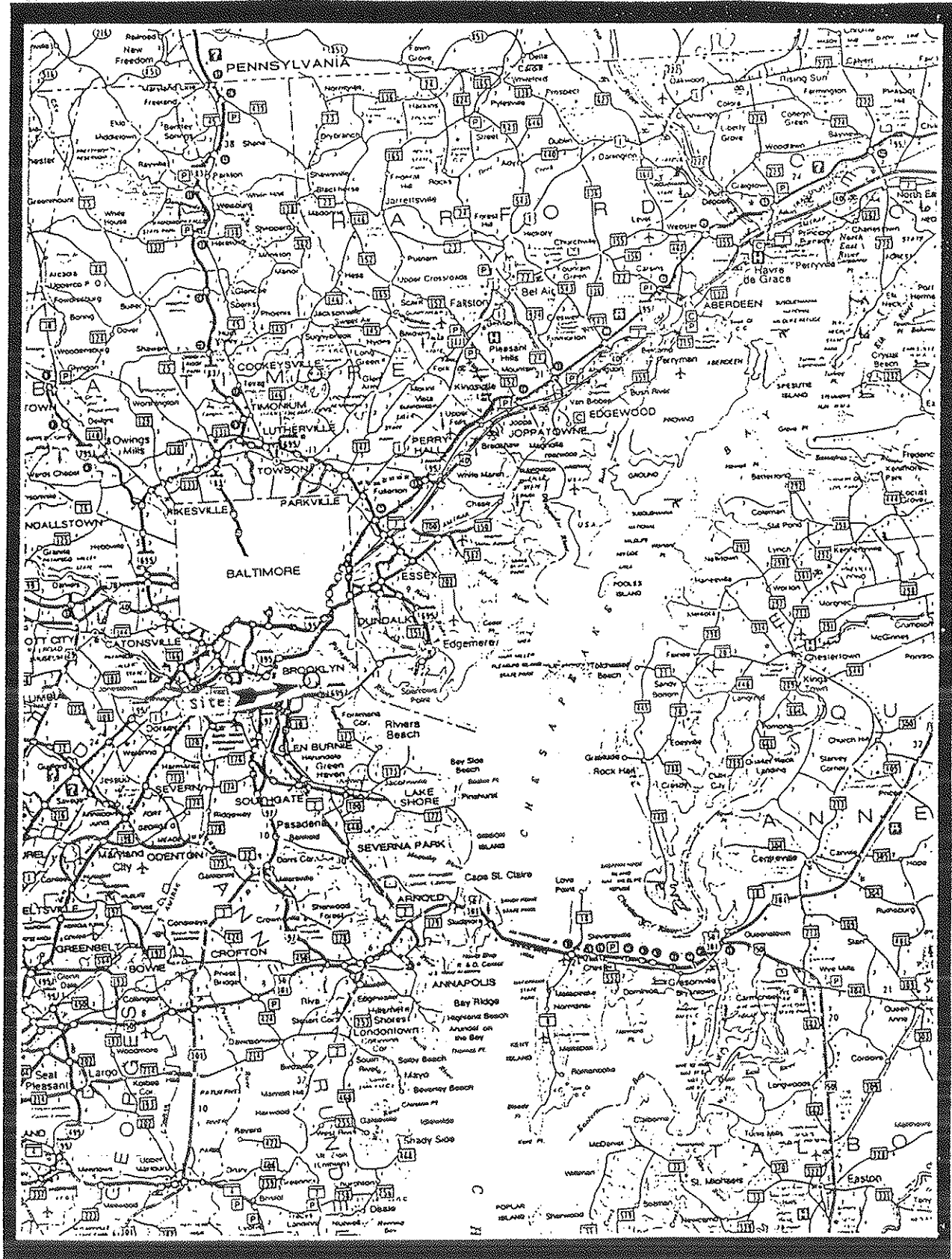


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REGIONAL HIGHWAY MAP

FIGURE 1

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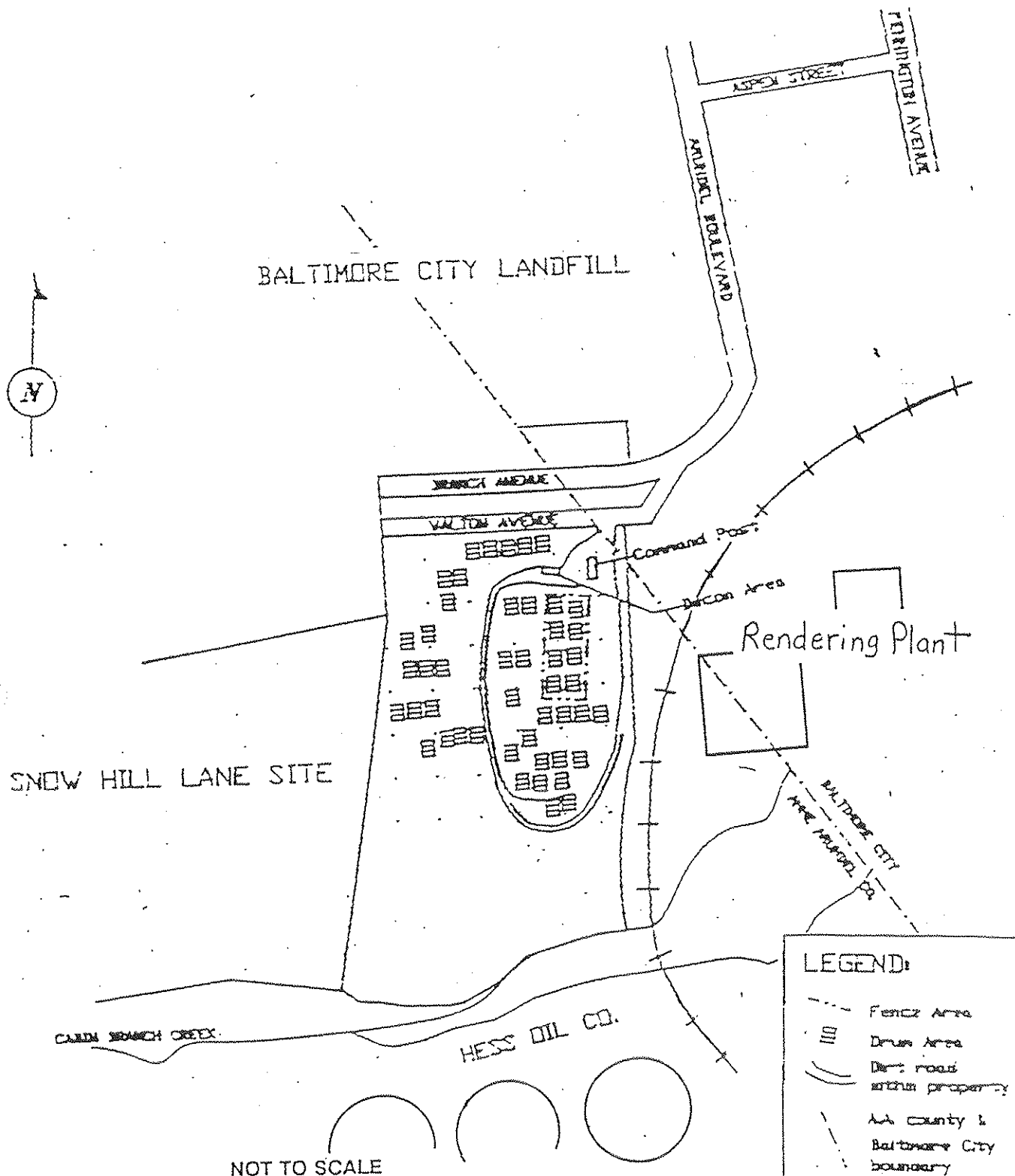


SCALE



DRUMCO DRUM SITE

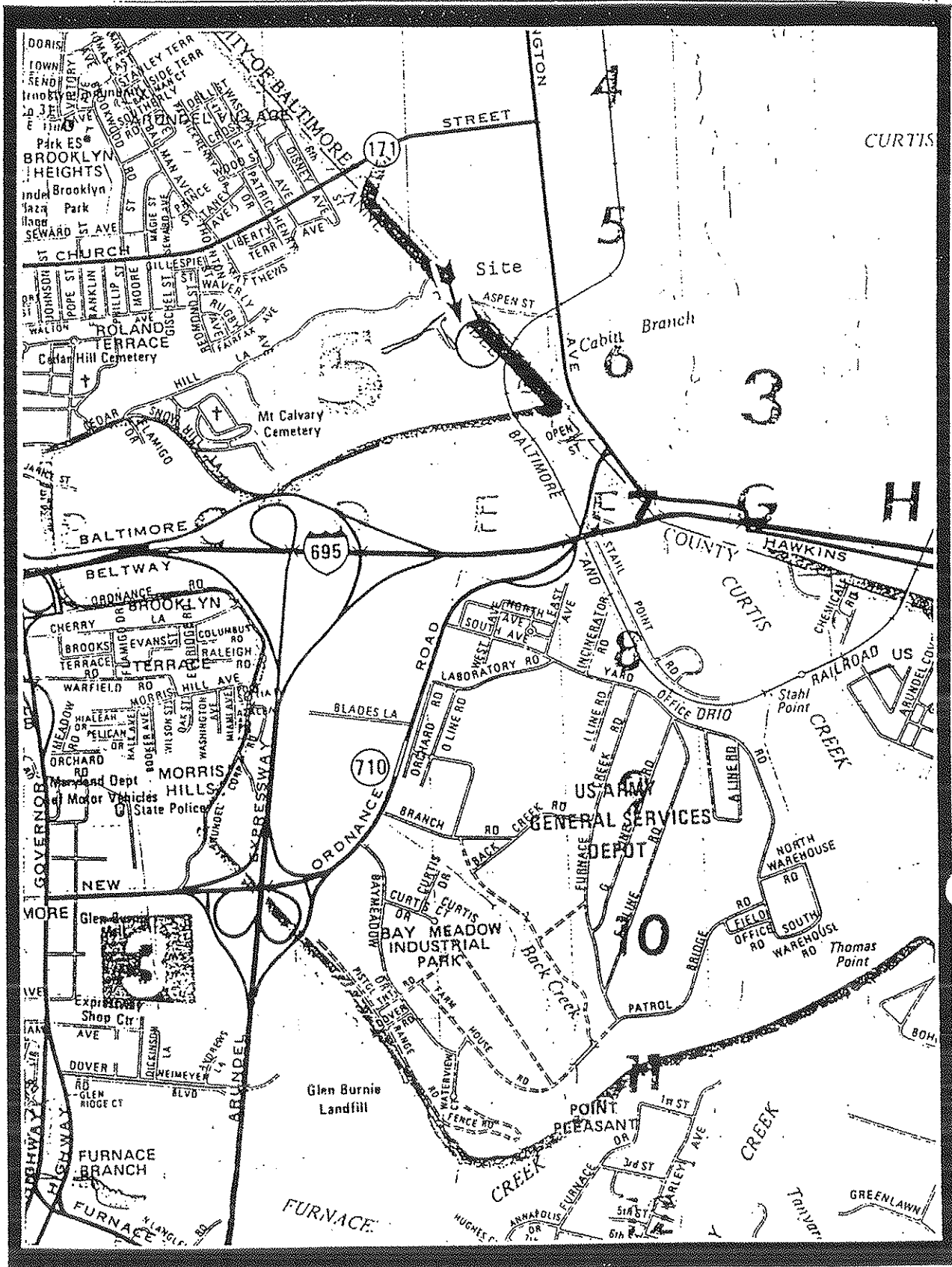
BROOKLYN, ANNE ARUNDEL CO., MD.



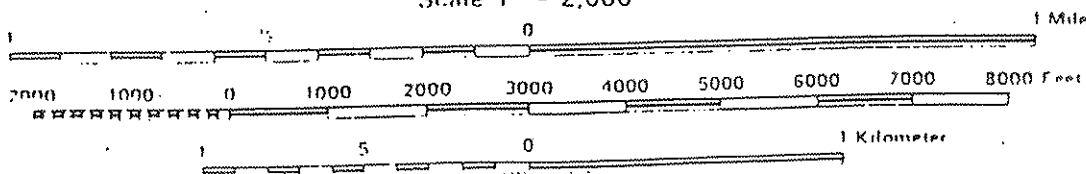
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SURVEY MAP

FIGURE 8 ORIGINAL



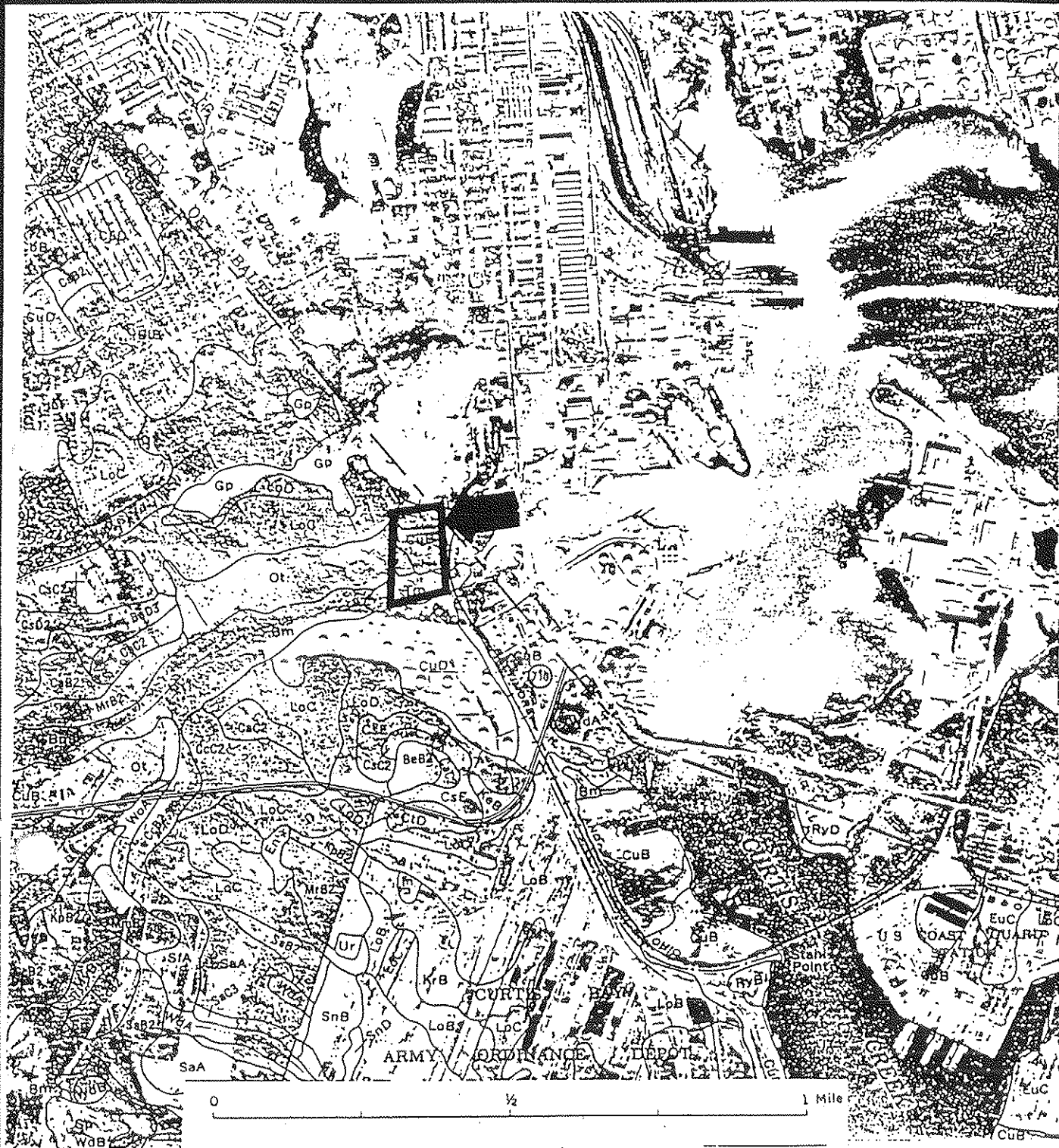
Scale 1" = 2,000'



SOILS MAP

FIGURE 6

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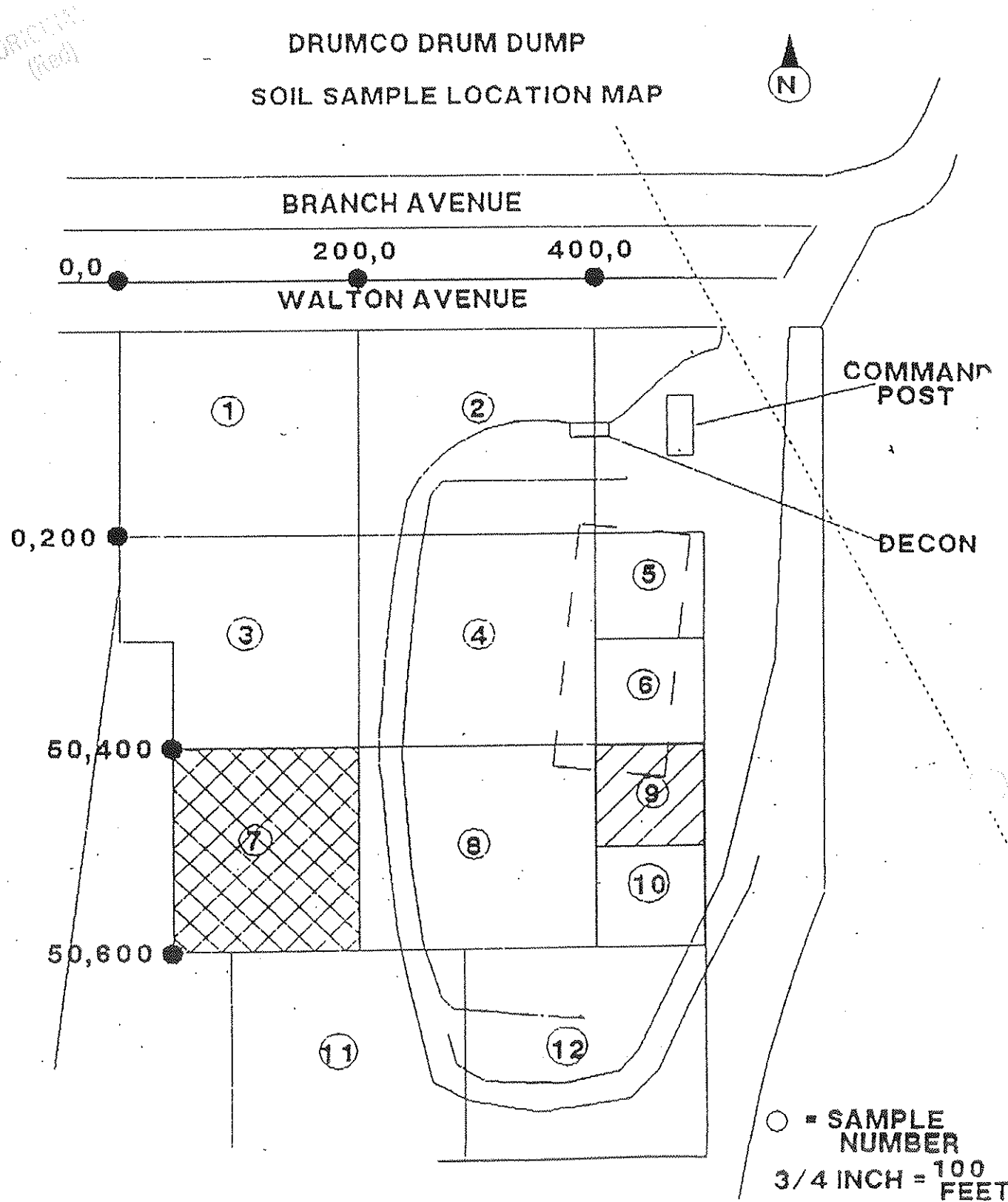
CuB - Cut and Fill Land Ot - Othello Silty Loam Tm - Tidal Marsh

US Department of Agriculture, Soil Conservation Service of Anne Arundel County, Maryland, 1959



SOIL SAMPLE AND EXCAVATION LOCATION MAP

FIGURE 5 (Red)



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PRELIMINARY ASSESSMENT
OF
DRUMCO DRUM DUMP SITE
BALTIMORE, MARYLAND
MD-408

DECEMBER, 1992

Prepared By: Maryland Department of the Environment
Hazardous and Solid Waste Management
Administration
2500 Broening Highway
Baltimore, Maryland 21224

Prepared For: U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

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1.0 INTRODUCTION

The Maryland Department of the Environment, Hazardous and Solid Waste Management Administration (MDE/HSWMA) performed this study under U.S. Environmental Protection Agency (USEPA) Cooperative Agreement V-003577-01-0.

The MDE/HSWMA was contracted to conduct a Preliminary Assessment (PA) of the Drumco Dump Site (MD-408) after the completion of the EPA funded Superfund Removal Action. The purpose of this PA was to collect sufficient information about the site to consider the potential for the release of hazardous waste from the site via groundwater, surface water, soil exposure and air pathways. The populations and sensitive environments which potentially may be impacted are then discussed. The scope of the PA included review of available file information, a target survey, and site reconnaissance.

2.0 SITE DESCRIPTION, OPERATIONAL HISTORY,
AND WASTE CHARACTERISTICS

2.1 LOCATION

The Drumco Drum Dump is located approximately 1/4 mile south of Curtis Bay, off Pennington Avenue (Rte 173). The site is situated on the southwestern Baltimore City limit and extends mostly into the adjacent Anne Arundel County (Figure 1,2,3). The majority of the site lies within Anne Arundel County. Vehicle access to the site is by way of Aspen Street off Pennington Avenue in Baltimore. The geographic coordinates are North 39° 12' 45" latitude and West 76° 35' 30" longitude. The Maryland Grid coordinates for the site are 502,800 feet north by 915,900 feet east^{1,2,3&4}.

The site may be reached from the Baltimore area by taking 695 west over the Francis Scott Key Bridge to the Pennington Avenue exit. Turn left on Aspen Street off Pennington Avenue. Then turn left on Arundel Boulevard (dirt road) through a gate locked by the Baltimore City workers past the Pennington Avenue Landfill to a left fork onto Walton Road. The site is on the left.

2.2 SITE DESCRIPTION

The Drumco Drum Dump is a drum storage yard owned by Drumco Inc., a drum recycler. The site previously consisted of numerous drum piles that together covered approximately 5 acres of the 14-acre tract (Figure 4). As of May 29, 1992 all the drums containing hazardous waste have been removed from the site.

The surrounding area is primarily industrial and closed landfills. The Baltimore City's Pennington Avenue Landfill is located adjacent to the site to the north. The Baltimore City Gas

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Plant is located on Aspen Street approximately 400 feet north of the site. A Hess Oil Terminal is located southwest of the site, approximately 300 feet downgradient. A rendering plant is located approximately 200 feet east and downgradient from the site. Other businesses are located approximately 300 feet east across Pennington Ave and are also downgradient from the site. (A Tax Map of the property is located in Appendix A.)

Two waterways, Cabin Branch and Curtis Bay, are located downgradient and within 1/4 mile south of the site with the Cabin Branch bordering the site to the south.

Access to the site before the removal action was virtually unimpeded with approximately half of the drums located within a poorly fenced portion of the storage yard. The remainder of the site, where the rest of the drums were scattered, was completely unfenced. Motorcycle paths and children's toys were observed by MDE investigators at the storage yard, indicating that public access to the site was occurring prior to the removal action.

As of July 30, 1992, the gate to the fence surrounding the site has not been repaired and is not locked (see Photograph 1 & 2). Portions of the fence were removed during the drum removal action. Access to the unfenced site area is still unimpeded.

2.3 OPERATIONAL/OWNERSHIP HISTORY

The site is owned by Mr. George Phillip Garrett, III, owner of Drumco Inc. 1427 Bank Street, Baltimore. The site property was previously owned by Emma Zuttermeister (1/3), Amy L. Goyne (1/6), June Susan Walmsley (1/6), Doris K. Schaumburg (1/9), Margaret K. Hinton (1/9), Richard Williams (1/18), and Robert Williams (1/18) upon the death of Louise M. Garratt December 9, 1985. Ms Garratt acquired the property from David Garratt and Sons Company November 10, 1970. Previous owners included Charles S. Walton and Company (January 13, 1920), South Baltimore Harbor and Improvement Company (prior to 1920), Louis Greineisen (September 30, 1878); and John T. Shorter et al (prior to 1878) (Appendix B).

Buildings of some sort probably existed on the site at sometime in its history. No information was found on the type of business operations that existed at the site before Drumco used the site for drum storage.

Drumco Inc. is in the business of recycling steel, poly and fiberboard drums which are used by other companies for storing hazardous and non-hazardous materials. Drumco Inc.'s industrial process, which is completed at its 1427 Bank Street location in Baltimore City, is to empty the residual contents of old drums into containers collecting a conglomeration of different substances in single drums. The empty drums are placed into a piece of equipment

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known as a submerger. In the submerger a drum is surrounded by caustic liquid which strips old paint from the drums and removes any material caked on the side of the drums. Eventually, the sludges which accumulate at the bottom of the submerger have to be removed and the old, spent, submerger fluids have to be replaced. All of these waste products are generated in the normal course of business of a drum recycler. Manifests for the removal of these wastes from the Bank Street facility by authorized and certified Waste handlers are on file in the MDE/RCRA offices.

This PA focuses on the Drumco Drum Dump site that is located off Aspen street in the Curtis Bay area. This site was supposed to be used by Drumco for the storage of surplus empty drums which had been recycled or were to be recycled at the Bank street facility.

2.4 HAZARDOUS WASTE MANAGEMENT PRACTICES

The MDE/Hazardous Waste Enforcement Division (HWED), RCRA inspectors, issued Drumco Inc. three Site Complaints, between July 1988 and August 1989, concerning improper storage of controlled hazardous substances at the 1427 Bank St. facility, in Baltimore City. On November 8, 1989, MDE/HWED issued Drumco Inc. an Administrative Consent Order requiring the company to dispose rinse wastes, generated from the rinsing of drums after the submerging process and other wastes including the spent submerging fluids, improperly stored at the Bank Street facility through proper manifests.

On September 25, 1990 inspectors from the Maryland Department of the Environment, Hazardous and Solid Waste Management Administration, discovered a trailer full of 55 gallon drums at the Aspen Street Drum Dump site. Numerous 55 gallon drums inside the trailer were leaking a crystalline substance from their bungs. A litmus paper test revealed the substance to be extremely alkaline.

The contents of the drums were sampled and found to contain ignitable, corrosive and toxic materials. These substances were of the same characteristics as the rinsing residue from the business of recycling. At the time the drums in question were discovered, Drumco Inc. was under an Administrative Consent Order which required them to properly dispose of the drum rinsings and other waste. Drumco Inc. did not have a permit to store, abandon, or dispose of any controlled hazardous substances at the Aspen Street Drum Dump site in Anne Arundel County (Appendix C).

There was no response by the owner to remove the illegally dumped drums. The MDE contracted A&A Environmental to remove the contaminated drums from the site. Removal operations took place on September 27 and 29, and October 1 and 4, 1991 during which an additional 30 drums containing hazardous material were discovered and disposed of properly (Appendix D).

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Inspections on January 7 and 12, 1991 revealed the Drumco Dump site's deteriorated condition. The investigations revealed that approximately several hundred 55 gallon drums, full of material, were scattered among thousands of empty 55 gallon drums on the 14 acre property. The owner of Drumco Inc. acknowledged his responsibility for the fact that the drums were placed on the site without a permit to receive, store, abandon, and to dispose of hazardous substances. Also, all waste transported to the Aspen Street Drum Dump site did not have manifests. On January 21, 1991 an Official Complaint and Order to remove the drums from the dump site was issued (Appendix E).

Additional inspections by MDE/HWED in February and March 1991 were initiated by an employee witness who reported that there were approximately 200 hazardous waste drums hidden in the storage yard. Deteriorated site conditions were observed with additional spillage in numerous places throughout the site (Appendix F).

On March 21, 1991 samples were collected from six drums that could be accessed in three separate drum piles on-site. Four of the drums were determined to be multilayered flammable liquids (i.e., flash points of less than 140 degrees F). One drum was determined to be corrosive (i.e., a pH greater than 12.5). The remaining drum did not indicate the characteristics of flammability or corrosivity (Appendix G).

In June 1991 an assessment performed at the Drumco Drum Dump site Maryland, in accordance with the National Contingency Plan (NCP) 40 CFR Part 300, identified a direct contact threat to humans, a fire hazard, and potential threat for additional releases of hazardous substances from drums at the site. The On-Scene Coordinator (OSC) from USEPA Eastern Response Section, determined that the site met the criteria for initiating a Removal Action under Section 300.415 of the NCP (Appendix H).

On July 1, 1991, Environmental Technology was contracted by USEPA to begin the Removal Action at the Drumco Dump Site. Approximately 5,000 drums containing hazardous waste were segregated, staged, sampled, and bulked. Some of the bulked waste was stabilized on site. A total of 24,000 empty drums were removed from the site. The empty drums included drums found empty and those drums generated from the bulking operation. On-site stabilization was performed on certain waste streams amenable to this process. A total of 90 cubic yards of stabilized material was generated from this operation. In addition, another 314 full drums of consolidated waste which was generated from the bulking operation were not amenable to on-site stabilization.

The site was gridded and soil samples were collected and analyzed. Based on the analytical results, soil was removed in two areas (Figure 5). Approximately 400 tons of suspect contaminated soils were removed and disposed off-site. The excavated areas were

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graded and seeded. These analytical results are in Appendix I.

The Removal Action was completed May 29, 1992.

2.5 PREVIOUS INSPECTIONS

On September 25, 1990 inspectors from the Maryland Department of the Environment, Hazardous and Solid Waste Management Administration, discovered a trailer full of 55 gallon drums at the Aspen Street site (Appendix C).

Inspections on September 26, 1991 prompted the Removal Action that took place on September 27 and 28, and October 1 and 4, 1991 (Appendix D).

On January 7 and 12, 1991, MDE inspections of the Aspen Street Drumco site revealed that site conditions had deteriorated. Drums were stored haphazardly throughout the yard and obvious spillage of drum materials was evident. MDE issued a formal Complaint and Order to Drumco, Inc. on Jan. 21, 1991, for violations of Maryland Water control and solid waste management laws (Appendix E).

Additional inspections in March 1991 revealed deterioration of site conditions and observed spillage in numerous places throughout the site (Appendix F).

An assessment performed in June 1991 at the Drumco Drum Dump site in Baltimore City and Anne Arundel County, Maryland, in accordance with the National Contingency Plan (NCP) 40 CFR Part 300, identified a direct contact threat to humans, a fire hazard, and potential threat for additional releases of hazardous substances from drums at the site. The OSC from USEPA Eastern Response Section, determined that the site met the criteria for initiating a Removal Action under Section 300.415 of the NCP (Appendix H).

3.0 SAMPLING

PRIOR TO REMOVAL ACTION

A total of six samples were collected from three locations in the storage area on March 21, 1991. All of the samples were analyzed for ignitability and corrosivity in order to quickly characterize the material as hazardous or non-hazardous.

AX03219101 - Was collected from a tan drum that was streaked with red paint. The drum contained a tan liquid that was 9 inches from the top of the drum. Hnu readings were 350 ppm. The sample collected from the container separated into two phases with the top remaining tan and a red paint-like sludge setting out on the bottom. Spillage from the drum that was noticeable when the

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container was righted had a distinct toluene-like odor.

AX03219102 - Was collected from a black drum that was labeled as containing white hot line traffic paint. The drum was opened and found to contain a black oily liquid with a Hnu reading of approximately 200 ppm.

AX03219103 - Was collected from a blue drum with a yellow lid. The material in the drum was a reddish brown liquid that eventually separated into two layers. Hnu readings for the container were 150 ppm.

AX03219104 - Was collected from a black drum with a white lid that also had a flammable liquid label. The inside of the drum had a yellow stain that resembled paint. The drum was full up to 10 inches from the top. Hnu readings were 250 ppm.

AX03219105 - Was collected from a black drum that was labeled with white writing that said MZ8228802. The container contained a red liquid that appeared to be paint and eventually settled into two layers. Hnu readings were 350 ppm.

AX03219106 - Was a greenish solid that was collected from a blue drum located outside of the fenced storage yard. The material had a field pH of 14 and had several inches of liquid on top of the material. Of the four drums in the same row examined, two of the drums had similar material with the same PH.

The samples were taken from various locations throughout the 14 acre site. A review of the records did not show the sample locations. The analytical results from the samples revealed that four of the drums contained multilayered flammable liquids (i.e., flash points of less than 140 degrees F). One drum was determined to contain corrosive materials (i.e., a PH greater the 12.5). The remaining drum did not indicate the characteristics of flammability or corrosivity. These analytical results are in Appendix G.

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DURING REMOVAL ACTION

Samples were collected throughout the removal action in order to characterize and segregate the material for the bulking operations. The final drum count from the segregation and field characterization is as follows:

Otherwise Regulated Materials (ORM) Liquid Waste.....	2947
ORM Solid Waste.....	16
Corrosive Liquids Acids (CLA).....	157
Corrosive Solids Acids.....	1
Corrosive Liquids Bases (CLB).....	158
Corrosive Solid Bases.....	49
Flammable Liquids.....	225
Flammable/Oxidizing Liquid Drums (bilayer).....	7
Flammable Solids.....	10
Oxidizers Liquids.....	34
Oxidizers Solids.....	3

Total Drums Sampled and Removed.....approximately 4,000

There was no analytical results for these materials in the files. These data were reported in the "POLREP" reports within the MDE CERCLA Removal Action files.

AFTER REMOVAL ACTION

Fourteen soil samples were collected on a gridded pattern across the site (Figure 5). The results showed that two of the samples contained chromium. These data are compiled in Appendix I.

There has been no other type of samples (surface water, groundwater, sediment, or air) taken at this site.

4.0 GROUNDWATER PATHWAY

The net annual precipitation at the site is estimated to be 8 inches per year. This estimate is based upon the reported mean values of 44 ipy precipitation and 36 ipy lake evaporation. The 2-year 24-hour rainfall is approximately 3.5 inches.

4.1 HYDROGEOLOGIC SETTING

4.1.1 SOILS

The soils at the site consist mostly of Cut and Fill Land of 0 - 5% slope (CuB) (Figure 6). These soils consist of miscellaneous land types in which soil has been so severely disturbed or altered by anthropogenic forces that it cannot be identified by soil series. Soil type varies greatly in these areas

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with gravel possible in some areas.

The western edge of the site has soils mapped as the Othello silty loam. These soils are characterized as poorly drained highly silty soils that have a mottled subsoil. A typical profile shows the surface layer as silt loam about 11 inches thick, the subsoil a friable heavy silt loam about 29 inches thick and an underlying friable fine sandy loam to about 60 inches depth.

The south edge of the site that is adjacent to the Cabin Branch Creek are mapped as Tidal Marsh (Tm). These are flat areas that are irregularly covered by tidal waters. These areas commonly only support grasses and are likely to be flooded during unusually high tides. These areas are sometimes filled in by dredges.

The hydraulic conductivity of the soils at this site is estimated to be 10^{-6} centimeters per second based on the soils that lie on the western edge of the site and the silty/ clayey appearance of the soil during the site visit¹¹. This hydraulic conductivity estimate indicated that these soils inhibit the flow of groundwater.

4.1.2 GEOLOGIC SETTING

The site lies near the western edge of the Atlantic Coastal Plain Physiographic Province approximately six miles southeast of the crystalline rock outcrops marking the break between the Piedmont and Atlantic Coastal Plain Provinces (The Fall Line). The Coastal Plain Province is a homocline characterized by a series of southeasterly dipping layers of unconsolidated sediments. The depth of these sediments varies from a few feet at the Fall Line where they pinch out to 8,500 feet under the Atlantic Coast. The site is mapped as the Potomac Group with the Potomac clays to the north and the Potomac sands over most of the rest of the site. Quaternary Alluviums are mapped along the Cabin Branch to the south of the site. The thickness of the Quaternary Alluvium ranges up to 70 feet (Figure 7).^{12, 13}

The Potomac Group is characterized by unconsolidated quartzose sand, gravelly sand, silt and locally micaceous clay with common planar and trough-type cross-stratification. The clay layers are lenticular and locally lignitic with carbonized leaves and wood fragments of varying sizes. The sediments were deposited in an environment of lakes, swamps and river flood plain. This continental origin explains the complex series of lens-shaped and channel deposits. These sediments lie unconformable on crystalline basement rock. Depth to basement rocks probably ranges from 200 - 300 feet in this area.^{12, 13}

There is no karst topography within a four mile radius of the site.

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4.1.3 HYDROGEOLOGIC LITHOLOGY

The hydrogeologic lithology of the site is not well defined. The site lies close to the Fall Line where the coastal plain sediments pinch out. The Potomac Group is a complex, multi-formation geologic unit of Cretaceous age (66 to 144 million years old). From bottom to top (oldest to youngest) the geologic units are the Patuxent Formation, the Arundel Formation and the Patapsco-Raritan Formation. The Patuxent and the Patapsco-Raritan Formations contain water-bearing sand layers, channel deposits and lens-shaped sand deposits that are among the most heavily used aquifers in Maryland. The Arundel Formation with its red and brown clay, with some lenses of sand and iron cemented sand stone serves as an effective aquiclude (confining layer) in most locations.¹³

Vroblesky and Fleck (1989) map the Patapsco Aquifer outcropping to the east of the site location. The Patuxent Aquifer outcrops very irregularly to the northwest of the site area. The inferred thickness of the confining unit (Arundel) is mapped at zero depth over the site area. These data indicate that the sand and clay interfingering become extensive and more complicated as the formations pinch out towards the Fall Line making the distinguishing of the aquifer and confining bed boundaries difficult.¹⁴

In general the Patapsco Aquifer is the unconfined water-table aquifer in this area with the Patuxent aquifer being the confined aquifer. Although the interfingering of sand and clay layers throughout the Potomac group could afford sections of the Patapsco aquifer as being confined, this general area is the recharge area for the Patuxent Aquifer and the local recharge zone for the Patapsco water table aquifer. The depth to aquifers are variable and difficult to determine in this area, but the close proximity of the site to the bay and sea level make it possible to approximate the water table depth by examining the topography and elevation. Using these data the depth of the shallowest aquifer in this area is estimated at about 10-20 feet below the surface.^{14&1} Shallow groundwater flow is expected to be to the east towards Curtis Bay. Deeper confined aquifer flow is expected to be to the southeast to be to the southeast, in the direction of strata dip.

4.2 GROUNDWATER TARGETS

Approximately (b) (9) persons residing within a four mile radius of the site property depend upon groundwater for their source of potable water.^{16&17}

The population estimated to be served by groundwater wells were calculated for specific distance rings and these data are tabulated in the following table:

Distance Ring From the Site	Population Served By:		Ring Total
	Private Wells	Municipal Wells*	
0 - 1/4	(b) (9)		
1/4 - 1/2			
1/2 - 1			
1 - 2			
2 - 3			
3 - 4			
Totals:			

This is the total population served by the municipal system within the distance mile radius. The letter represents the following municipal system:

A - Glen Dale - part of Glen Burnie Blended System, 7,500 to 10,000 persons served

Of this total, approximately (b) (9) persons depend upon private domestic wells for potable water. This estimate is based upon well counts from the MDE Residential Sanitation Program and an average of 2.7 persons per dwelling for Anne Arundel County.^{5&17} The nearest

(b) (9)

of this well.

(b) (9)

The MDE/Water Management Administration (MDE/WMA) is in the process of developing the wellhead protection area (WHPA) program for municipal groundwater systems in Maryland. The MDE/WMA has provided the MDE/HSWMA with an interim estimate of two miles as the wellhead protection area for municipal wells located in non-karst

(b) (9)

4.3 GROUNDWATER CONCLUSIONS

The Drumco Drum Dump site does not maintain a private or monitoring wells. There is no known documentation of the condition of groundwater at the site. There is no evidence that hazardous waste from the site source has not contaminated the groundwater.

5.0 SURFACE WATER PATHWAY

5.1 HYDROLOGIC SETTING

The 2-year 24-hour rainfall is approximately 3.5 inches⁹. The Drumco Drum Dump Site is mostly located in the greater than 500-year flood plain with the southern edge adjacent to Cabin Branch in the 100-year flood zone.²¹

Overland surface water runoff from the site will follow one general direction. Runoff will flow to the south entering the Cabin Branch Creek located approximately 200 feet from the nearest drum dump location. (Figure 4).

The runoff pathway is the over land route to the surface water migration pathway (SWMP). The probable point of entry (PPE) for contamination entering the SWMP is the wetlands adjacent to the Cabin Branch Creek where it intersects the southern edge of the site property. The Cabin Branch Creek, which is estimated to flow less than ten cubic feet per second (cfs) at the PPE, continues east 0.9 mile, and converges with Curtis Bay. Curtis Bay, which flows greater than 100 cfs, continues southeast for approximately 2.7 miles where it converges with the Patuxent River. The Patuxent River, which is estimated to flow at greater than 100 cfs, flows south for 8.5 miles to the Chesapeake Bay. The water bodies converge 12.1 miles from the PPE and flow is probably greater than 100 cfs. The SWMP continues along the Chesapeake Bay, for 2.9 miles to complete the 15 mile SWMP from the PPE.

5.2 SURFACE WATER TARGETS

There are no surface water intakes for potable water located along the surface water migration pathways associated with the site.

All bodies of water associated with the surface water pathways are considered fisheries for sustenance and recreational purposes. The Curtis Bay and Patuxent River, as well as the Chesapeake Bay, are used for recreational boating and swimming.

EPA designated sensitive environments (wetlands) are located along the surface water migration pathway. From the PPE to Curtis Bay, the Cabin Branch Creek has 8/10 frontage mile of palustrine, forested, broad-leaved, deciduous, wetland and palustrine, emergent narrow-leaved persistent wetlands. There are 1.3 frontage miles of wetlands along Curtis Bay and 10.5 frontage miles of wetland along the Patapsco River to the Chesapeake Bay. These wetlands are classified as mostly estuarine, intertidal, beach bar. Approximately five frontage miles of estuarine, intertidal, beach bar wetlands are located along the Chesapeake Bay SWMP.^{7,22,23,24} A total of 17.6 frontage miles of wetlands are located along the

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site's SWMP (Figure 8).

Numerous park environments located along this surface water pathway are noted but do not qualify as a sensitive environment by the EPA. Approximately 5 miles from the PPE is the Fort Armstead Park located at Hawkins Point. About 9 miles away from the PPE is Fort Smallwood Park located at Rock Point. Approximately 12 miles from the PPE is the Fort Howard Park located at North Point. Dovon's Memorial Park is located 13 miles from the PPE south of Bokin Point.

5.3 SURFACE WATER PATHWAY CONCLUSIONS

The possibility of surface water contamination exists for the surface water migration pathway. The surface water runoff route carved a small gully in the unpaved car path that goes off the level part of the site down an incline to the PPE on Cabin Branch Creek that runs along the southern boarder of the site. These runoff ground features are indicative of a likelihood of more precipitation runoff than infiltration into the soils. There is no known stressed vegetation along the surface water runoff route. There has been no known sampling of surface water associated with the site.

6.0 SOIL EXPOSURE AND AIR PATHWAYS

6.1 PHYSICAL CONDITIONS

SITE VISIT July, 30 1992

The Drumco Drum Dump site property is accessible from all boundaries, except at the entrance gate, located at the access road on Arundel Boulevard (See Figure 4). This gate accesses both the site and the Pennington Avenue Landfill and is generally locked except when city workers are working at the adjacent Landfill.

The site area is approximately 14 acres and slopes at about 5 to 6% towards the southeast. The site is bordered on the north by the upgradient inactive Pennington Avenue Landfill. To the east and downgradient of the site is a Rendering Plant. South and downgradient from the site and across from the Cabin Branch Creek is Hess Oil Company Tank farm. West and downgradient from the site is the Snow Hill Landfill. The Snow Hill Landfill is on the CERCLIS (MD-201) and a Preliminary Assessment was performed in September 1986.²⁵

During the site visit some stained soil and evidence of buried drum parts were observed (see Photographs 3 & 4). Also piles of rubble and miscellaneous asphalt debris were found in the northwest quadrant of the site (see Photographs 5 & 6). The abandoned burnt

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trailer shell and another miscellaneous rubble piles with drum parts visible were observed in the southwest quadrant of the site as it began to slope down towards the Cabin Branch Creek (see photographs 7, 8 & 9). A small pile of drum parts was observed in the southeast part of the site (see photograph 10).²⁵

6.2 SOIL AND AIR TARGETS

The Drumco Drum Dump site is located southeast of Baltimore, MD and north of Glen Burnie, MD in the Curtis Bay area. Land use in the immediate vicinity of the site is industrial and landfills.

This inactive site has no on-site employees. Aerial photographs show that the nearest individuals are the workers at the rendering plant, 500 feet to the east of the site. There are no residences, schools, or day care centers located within 200 feet of any source on the site.

The EPA designated terrestrial sensitive environments located on-site are wetlands.

An estimated 91,229 persons reside within a four mile radius of the site. This population is distributed as follows^{1,2,3,4&5}:

Distance of Ring from the Site (miles)	Residential Population in the Ring
0 - 1/4	0
1/4 - 1/2	145
1/2 - 1	3,124
1 - 2	14,938
2 - 3	25,635
3 - 4	47,387
Total Population:	91,229

The nearest residence is located approximately 2,500 feet east of the site.

There is no known report of hazardous contaminants having been released to the air.⁶ An estimated 2.5 acres of Palustrine emergent, narrow-leave persistent wetlands are located along the southern boarder of the site of which one acre is estimated to be on-site. An estimated 2.5 acres of palustrine, forested broad-leaved deciduous wetlands are located within 1/4 mile radius of the site. Two and one half acres of estuarine flat and one acre of estuarine emergent narrow-leaved persistent wetlands are located within 1/4 mile of the site. The total acreage of wetlands within a 1/2 mile of the site is 8.5 acres (Figure 9).⁷

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6.3 SOIL AND AIR PATHWAY CONCLUSIONS

There is documentation of contaminated soils at the Drumco Drum Dump site. There have been no reports of adverse health effects in the community attributable to an air release from the site.⁶ If an air release should occur, those at greatest risk would be the workers at the Rendering Plant and the on-site wetlands.

7.0 SUMMARY AND CONCLUSIONS

Drumco Inc., a drum recycling company, used a 14 acre lot in the Curtis Bay area for the storage of surplus empty drums. At some point drums containing hazardous wastes were dumped among existing empty drums on-site and a trailer containing leaking drums was also abandoned at the site. The wastes were a variety of substances some of which were similar in characteristics to the waste generated from the recycling of drums. One MDE removal action and one very large EPA Superfund Removal Action disposed of approximately 5000 drums containing hazardous waste and 24,000 empty drums. One large and one small pile of rubble remain on site.

These leaky drums contaminated the soils on-site of which only two areas were excavated, but the possibility of human exposure to the contaminated soils exists. Due to the site's close proximity to the Cabin Branch Creek that lies to the south and borders the property and the characteristic impermeable soils observed at the site that foster runoff and not percolation, there is the likelihood of contamination of the surface water via runoff from the site. This potential contamination may pose a threat to the environment and to human targets through food chain contamination. Groundwater flow in the area is the southeast where there are no groundwater users. The groundwater users are (b) (9). No release to the air is suspected.

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SECTION 6.0

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6.0 REFERENCES FOR SECTIONS 1.0 THROUGH 5.0

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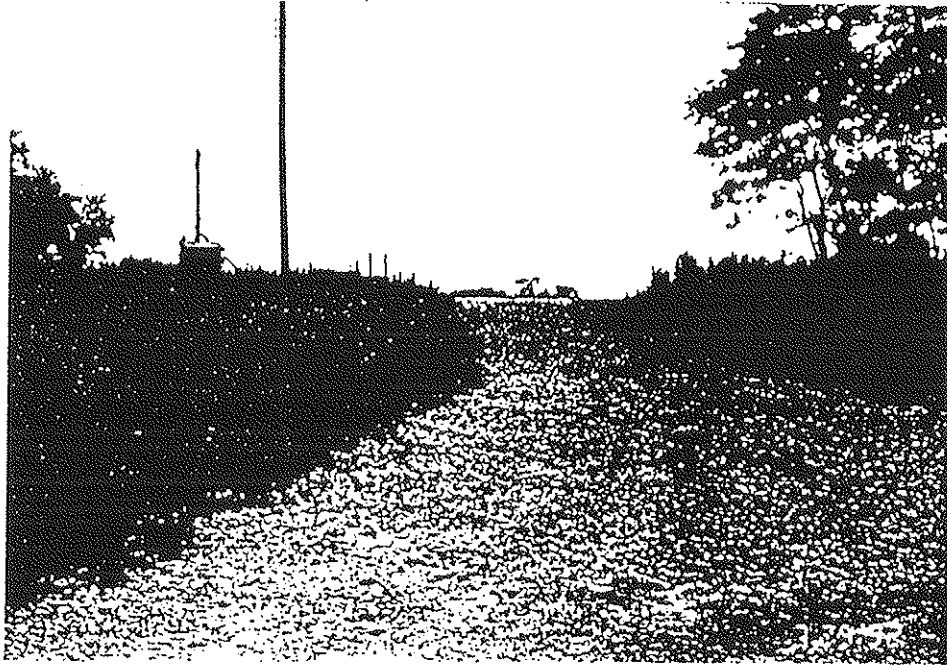
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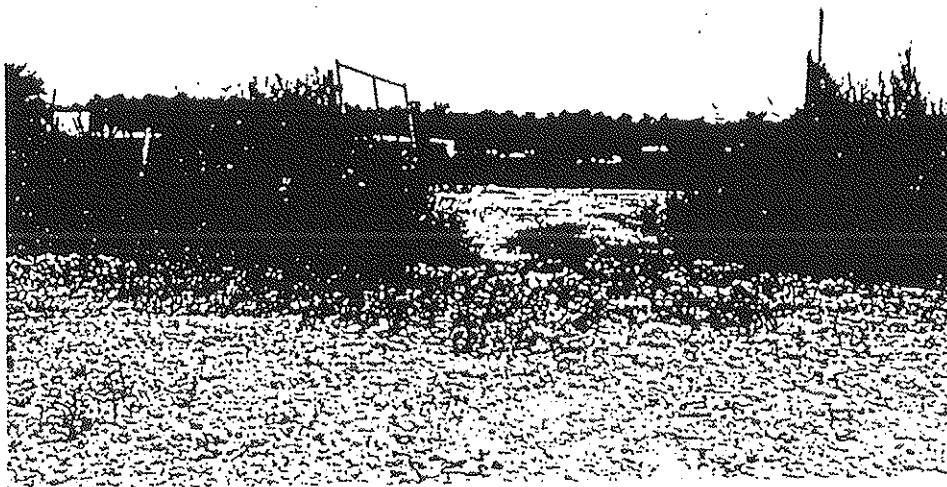
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9.0 PHOTOGRAPHS

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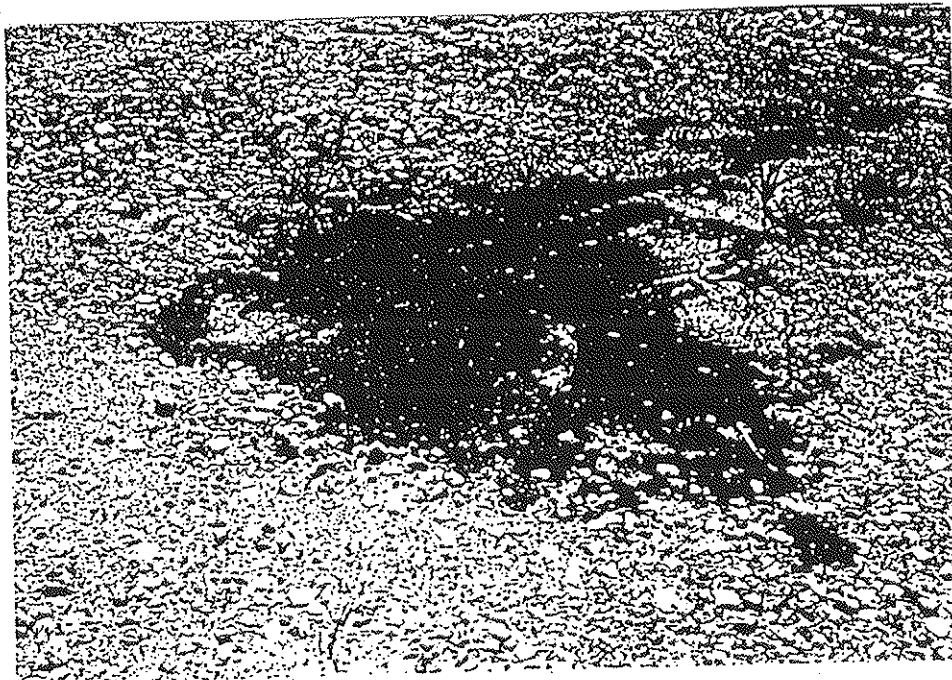


PHOTOGRAPH 1: Site access from Arundel Boulevard.



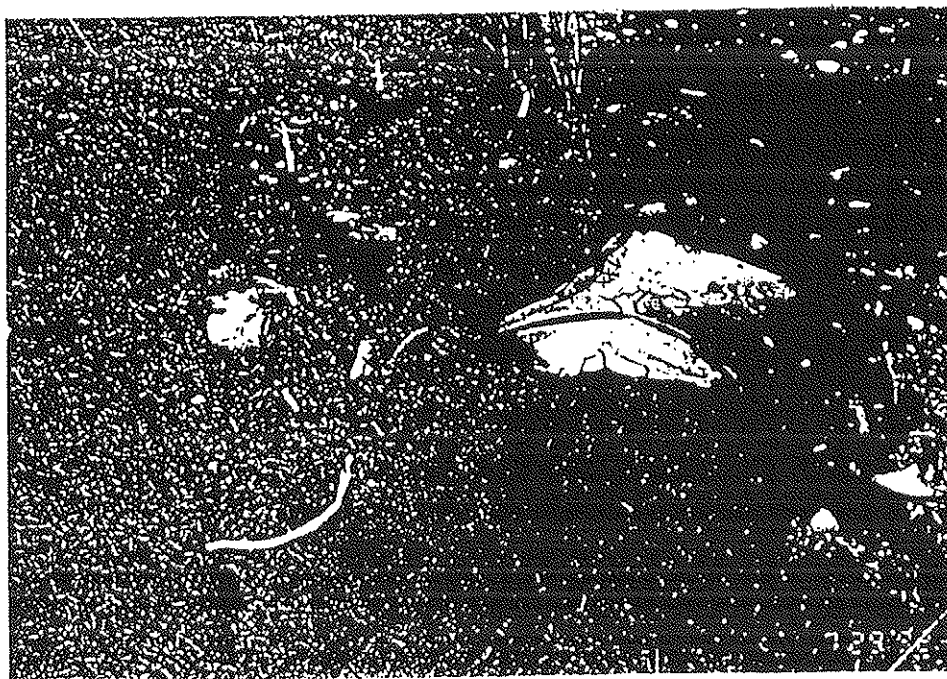
PHOTOGRAPH 2: Partial fencing within site area.

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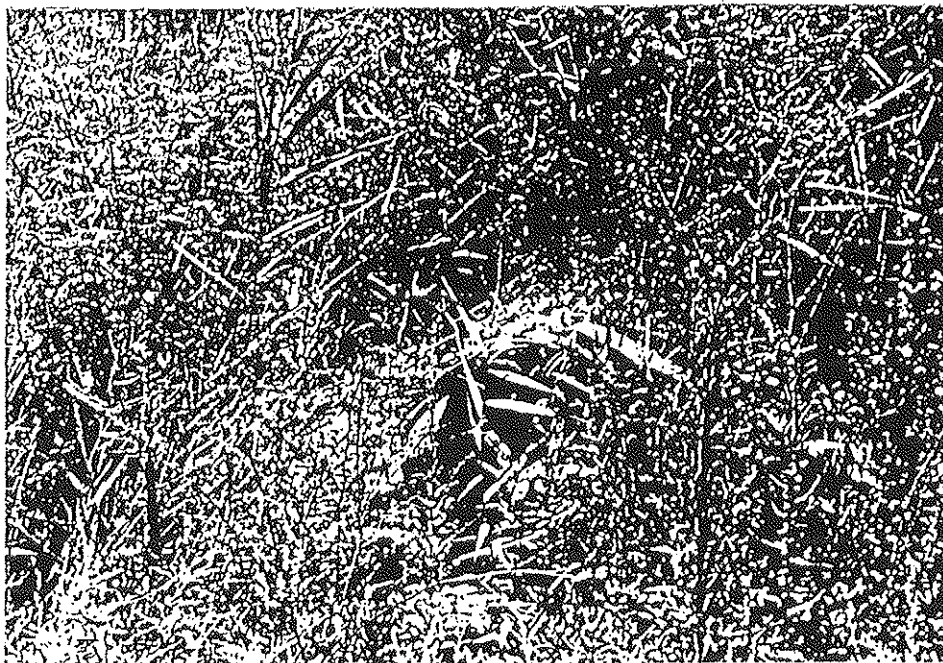
PHOTOGRAPH 3: Stained soils



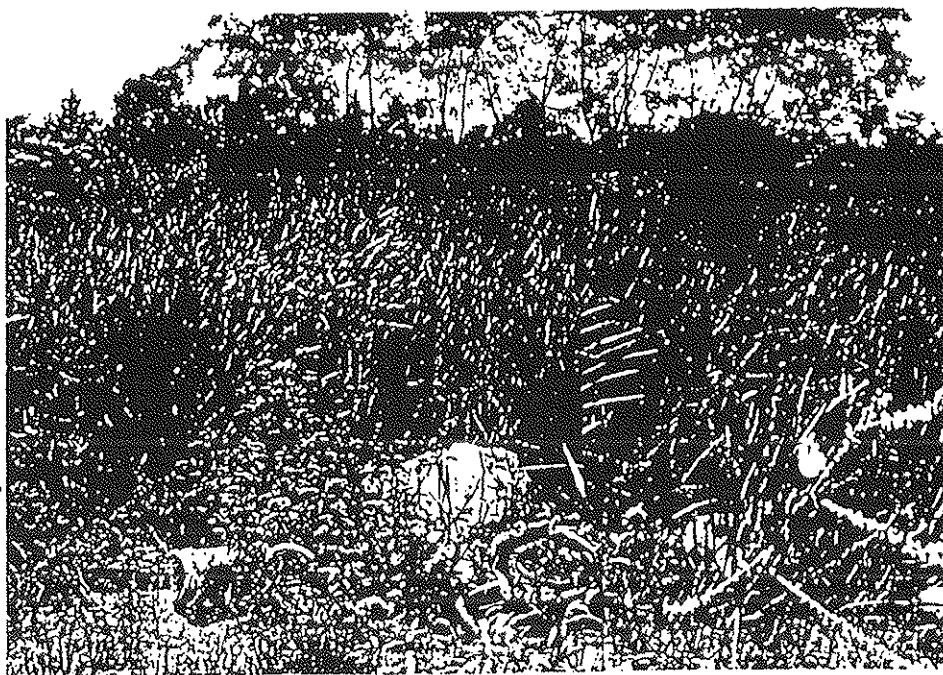
PHOTOGRAPH 4: Drum parts

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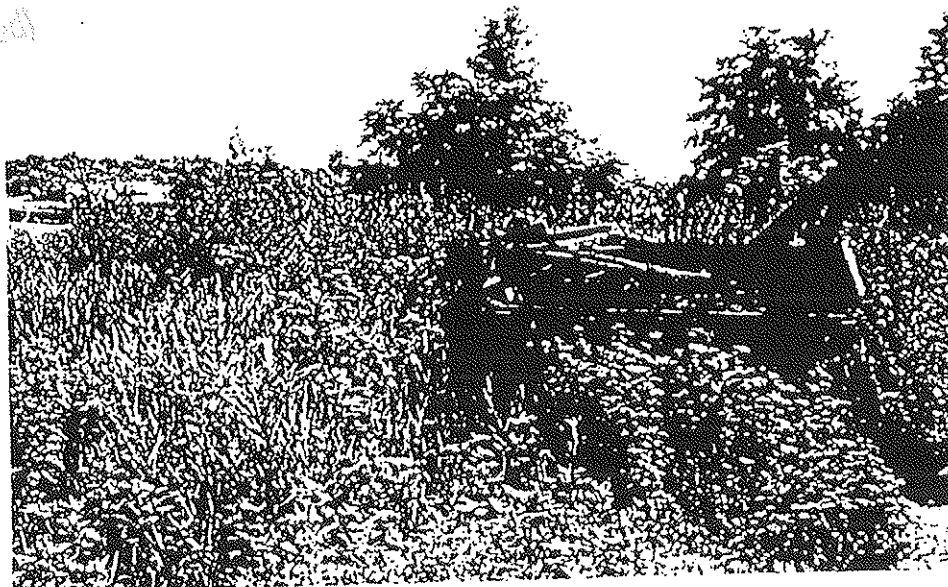
PHOTOGRAPH 5: Northwest part of site



PHOTOGRAPH 6: Northwest part of site

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PHOTOGRAPH 7: Burnt abandon ed trailer



PHOTOGRAPH 8: Trash or Rubble pile on southwest portion of site
near the Cabin Branch Creek.

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APPENDIX A

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION****I. IDENTIFICATION**01 STATE
MD02 SITE NUMBER
408ORIGINAL
(10/1)**II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS**

01 PHYSICAL STATES (Check all that apply) <input checked="" type="checkbox"/> A. SOLID <input type="checkbox"/> B. POWDER, FINES <input checked="" type="checkbox"/> C. SLUDGE <input type="checkbox"/> D. OTHER _____ (Specify) <input type="checkbox"/> E. SLURRY <input checked="" type="checkbox"/> F. LIQUID <input type="checkbox"/> G. GAS	02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent) TONS <u>436</u> CUBIC YARDS _____ NO. OF DRUMS <u>5,544</u>	03 WASTE CHARACTERISTICS (Check all that apply) <input checked="" type="checkbox"/> A. TOXIC <input checked="" type="checkbox"/> B. CORROSIVE <input type="checkbox"/> C. RADIOACTIVE <input type="checkbox"/> D. PERSISTENT <input type="checkbox"/> E. SOLUBLE <input type="checkbox"/> F. INFECTIOUS <input checked="" type="checkbox"/> G. FLAMMABLE <input checked="" type="checkbox"/> H. IGNITABLE <input type="checkbox"/> I. HIGHLY VOLATILE <input type="checkbox"/> J. EXPLOSIVE <input checked="" type="checkbox"/> K. REACTIVE <input checked="" type="checkbox"/> L. INCOMPATIBLE <input type="checkbox"/> M. NOT APPLICABLE
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III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTES	unknown		Various wastes were present in drums found onsite.
SOL	SOLVENTS	unknown		
PSO	PESTICIDES			Exact quantities of each were not recorded.
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS	unknown		
	ACIDS	unknown		
	BASES	unknown		
MES	HEAVY METALS	unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Methyl ethyl Ketone	78-93-3	Drum	2,510	ppm
MES	Lead	7439-92-1	Drum	217	ppm
OCC	Carbon Tetrachloride	56-23-5	Drum	78.7	ppm
SOL	Tetrachloroethylene	127-18-4	Drum	51.9	ppm
ACD	Hydrochloric Acid	7647-01-0	Drum	unknown	
ACD	Sulfuric Acid	7664-93-9	Drum	unknown	
MES	Chromium	7440-47-3	Drum	100	ppm
MES	Cadmium	7440-43-9	Drum	16	ppm
SOL	Trichloroethylene	79-01-6	Drum	457	ppm
S	1,2-Dichloroethane	107-06-2	Drum	379	ppm
OCL	Acetone	67-64-1	Drum	8,940	ppm
OCL	Toluene	108-88-3	Drum	3,010	ppm
OCC	Xylene	108-38-3	Drum	1,080	ppm
SOL	Trichloroethane	71-55-6	Drum	3,240	ppm
OCL	Ethyl Benzene	100-41-4	Drum	1,970	ppm

IV. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S. EPA - Federal On-scene Coordinator's Report for Drumco Drum Dump Site

**EPA**

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS**

I. IDENTIFICATION01 STATE
MD02 SITE NUMBER
408**II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)**01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

None reported or observed

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include name(s) of species)02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

None reported or observed

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

None reported or observed

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES
(Spills, Runoff, Standing liquids, Leaking drums)02 ☒ OBSERVED (DATE: 9/25/90)☐ POTENTIAL☐ ALLEGED

03 ESTIMATED POPULATION POTENTIALLY AFFECTED: 0

04 NARRATIVE DESCRIPTION

Wastes were stored in drum onsite. Drums were observed to be leaking, not sealed properly and stored haphazardly.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

None reported or observed

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

None reported or observed

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

All drums containing hazardous materials were illegally transported, stored, abandoned, and disposed at the subject site.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: 91,229**IV. COMMENTS**

None

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S. EPA - Federal On-scene Coordinator's Report for Drumco Drum Dump Site

**EPA**

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT**
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION01 STATE
MD02 SITE NUMBER
408**II. HAZARDOUS CONDITIONS AND INCIDENTS**01 ☐ A. GROUNDWATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ B. SURFACE WATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ C. CONTAMINATION OF AIR02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS02 ☐ OBSERVED (DATE: _____)☒ POTENTIAL☐ ALLEGED03 POPULATION POTENTIALLY AFFECTED: 0

04 NARRATIVE DESCRIPTION

Many drums were discovered onsite that had contents that were potentially ignitable

01 ☒ E. DIRECT CONTACT02 ☐ OBSERVED (DATE: _____)☒ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

Many drums were discovered onsite containing hazardous wastes. The site was accessible to the public and direct contact may have occurred.

01 ☒ F. CONTAMINATION OF SOIL02 ☒ OBSERVED (DATE: 2/4/92)☐ POTENTIAL☐ ALLEGED03 AREA POTENTIALLY AFFECTED: 2
(Acres)

04 NARRATIVE DESCRIPTION

Twelve composite soil samples were collected from 12 areas onsite. Two areas indicated contamination, Area 7 showed extractable organic halides (850 ppm) and Area 9 showed chromium (3.29 ppm).

01 ☐ G. DRINKING WATER CONTAMINATION02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ H. WORKER EXPOSURE/INJURY02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed

01 ☐ I. POPULATION EXPOSURE/INJURY02 ☐ OBSERVED (DATE: _____)☐ POTENTIAL☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____

04 NARRATIVE DESCRIPTION

None reported or observed



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE
MD

02 SITE NUMBER
408

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY
(Check as applicable)

SURFACE WELL
COMMUNITY A. ☒ B. ☒
NON-COMMUNITY C. ☒ D. ☒

02 STATUS

ENDANGERED AFFECTED MONITORED
A. ☐ B. ☐ C. ☐
D. ☐ E. ☐ F. ☐

03 DISTANCE TO SITE

A. (b) (9) (mi)
B. (b) (9) (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING
(Other sources available)
COMMERCIAL, INDUSTRIAL, IRRIGATION
(No other water sources available)
☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION
(Limited other sources available) ☐ D. NOT USED, UNUSABLE

02 POPULATION SERVED BY GROUND WATER

(b) (9)

03 DISTANCE TO NEAREST DRINKING WATER WELL

(b) (9)

(mi)

04 DEPTH TO GROUNDWATER

unknown (ft)

05 DIRECTION OF GROUNDWATER FLOW

east

06 DEPTH TO AQUIFER
OF CONCERN

unknown (ft)

07 POTENTIAL YIELD
OF AQUIFER

unknown (gpd)

08 SOLE SOURCE AQUIFER

☐ YES ☒ NO

9 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

No wells onsite

10 RECHARGE AREA

☒ YES
☐ NO

COMMENTS

Percolation of precipitation

11 DISCHARGE AREA

☐ YES
☒ NO

COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE IN VICINITY (Check one)

☒ A. RESERVOIR, RECREATION
DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY
IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:

AFFECTED

DISTANCE TO SITE

Cabin Branch Creek

☐

0.1

(mi)

Curtis Bay

☐

1

(mi)

Patapsco River

☐

4

(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

TWO (2) MILES OF SITE

THREE (3) MILES OF SITE

A. 3,269
NO. OF PERSONS

B. 18,207
NO. OF PERSONS

C. 43,842
NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.5

(mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

unknown

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.1

(mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is located in a mainly industrial area. Directly north of the site is the closed City of Baltimore Pennington Avenue Landfill. West of the site are woods and fields. Population in the immediate vicinity of the site is very low, however, population becomes dense within 0.5 mile of the site.

**EPA**

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION**

I. IDENTIFICATION01 STATE
MD02 SITE NUMBER
408**II. PERMIT INFORMATION**

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A. NPDES				
<input type="checkbox"/> B. UIC				
<input type="checkbox"/> C. AIR				
<input type="checkbox"/> D. RCRA				
<input type="checkbox"/> E. RCRA INTERIM STATUS				
<input type="checkbox"/> F. SPCC PLAN				
<input type="checkbox"/> G. STATE (specify)				
<input type="checkbox"/> H. LOCAL (specify)				
<input type="checkbox"/> I. OTHER (specify)				
<input checked="" type="checkbox"/> NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT			<input type="checkbox"/> A. INCINERATION	<input type="checkbox"/> A. BUILDINGS
<input type="checkbox"/> B. PILES			<input type="checkbox"/> B. UNDERGROUND INJECTION	NONE
<input checked="" type="checkbox"/> C. DRUMS, ABOVE GROUND	23,733	Drums	<input type="checkbox"/> C. CHEMICAL/PHYSICAL	
<input type="checkbox"/> D. TANK, ABOVE GROUND			<input type="checkbox"/> D. BIOLOGICAL	
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input checked="" type="checkbox"/> H. OTHER N/A (Specify)	
<input type="checkbox"/> I. OTHER (Specify)				06 AREA OF SITE 14 (Acres)

07 COMMENTS

The only evidence of past drum storage practices are piles of drum lids that remain after the EPA Removal Action.

IV. CONTAINMENT**01 CONTAINMENT OF WASTES (Check one)**

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Drums were stored onsite haphazardly. Many drums were leaking, not sealed properly or not sealed at all.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE : ☒ YES ☐ NO

02 COMMENTS

There was evidence during the initial inspections by MDE that the site had been accessed by the public.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA**

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION**

I. IDENTIFICATION01 STATE
MD02 SITE NUMBER
408ORIGINAL
(Red)**ENFORCEMENT INFORMATION**

PAST REGULATORY ACTION

☒ YES ☐ NO

DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

The MDE/Hazardous Waste Enforcement Division issued Drumco, Inc. for improper storage of controlled hazardous substances for the facility located at 1427 Bank Street in Baltimore City, in August 1989. In November 1989, MDE issued Drumco, Inc. an Administrative Consent Order requiring the company to properly dispose of rinse wastes generated from rinsing drums.

MDE Hazardous and Solid Waste Administration inspected the Drumco Drum Dump Site in September 1990. A trailer of drums that contained the above-mentioned rinse wastes was discovered. Further inspections by MDE of the subject site revealed several hundred drums scattered throughout the site. In January 1991, MDE issued a formal complaint and order to Drumco, Inc. for violations of Maryland water control and solid waste management laws.

In March 1991, MDE sampled six drums; five were found to contain hazardous substances and approximately 35 drums were removed from the site in September and October 1991.

In April 1991, a removal assessment was performed by EPA and in June 1991, EPA authorized funding to remove the drums from the site. EPA mobilized in July 1991 and completed removal activities in May 1992. A total of 23,733 drums were removed from the site; 3,815 were determined to contain hazardous materials.

Drum leakage also contaminated onsite soils. A total of 436 tons of contaminated soil was removed from the site.

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES****I. IDENTIFICATION**01 STATE
MD02 SITE NUMBER
408**II. PAST RESPONSE ACTIVITIES (Continued)**01 ☐ R. BARRIER WALLS CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ S. CAPPING/COVERING
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ T. BULK TANKAGE REPAIRED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ U. GROUT CURTAIN CONSTRUCTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ V. BOTTOM SEALED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ W. GAS CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ X. FIRE CONTROL
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ Y. LEACHATE TREATMENT
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ Z. AREA EVACUATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ 1. ACCESS TO SITE RESTRICTED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☐ 2. POPULATION RELOCATED
04 DESCRIPTION

02 DATE _____

03 AGENCY _____

N/A

01 ☒ 3. OTHER REMEDIAL ACTIVITIES
04 DESCRIPTION02 DATE 7/1/91 - 4/28/9203 AGENCY EPA

Twenty three thousand seven hundred thirty-three (23,733) drums were removed from the site, 5,544 of which contained some type of material. An emergency Removal Action by EPA began on July 1, 1991 and was completed April 28, 1993.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES****I. IDENTIFICATION**01 STATE
MD02 SITE NUMBER
408ORIGINAL
(red)**II. PAST RESPONSE ACTIVITIES**01 ☐ A. WATER SUPPLY CLOSED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☒ E. CONTAMINATED SOIL REMOVED 02 DATE 5/19 21/92 03 AGENCY EPA
04 DESCRIPTION

One hundred sixty four (164) tons of soil contaminated with extractable organic halides and 272 tons of soil contaminated with chromium were removed from the site.

01 ☒ F. WASTE REPACKAGED 02 DATE 7/1/91 - 4/28/92 03 AGENCY EPA
04 DESCRIPTION

All waste found in onsite drums was either bulked into new drums or into tanks, or overpacked and shipped offsite.

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ H. ON-SITE BURIAL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ L. ENCAPSULATION 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ N. CUTOFF WALLS 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

N/A

**EPA**

**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION**

I. IDENTIFICATION01 STATE
MD02 SITE NUMBER
408**II. ON-SITE GENERATOR**

01 NAME	02 D & B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME Drumco, Inc.	02 D & B NUMBER	01 NAME	02 D & B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, Etc.) 1427 Bank Street	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY Baltimore	06 STATE MD	07 ZIP CODE 21231	05 CITY 06 STATE 07 ZIP CODE
01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY 06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY 06 STATE 07 ZIP CODE
01 NAME	02 D & B NUMBER	01 NAME	02 D & B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY 06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION****I. IDENTIFICATION**01 STATE
MD02 SITE NUMBER
208010111-11
(Recd)**II. SAMPLES TAKEN**

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER		No samples were collected	
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
PID	No readings above background were recorded
Mini Alert	No readings above background were recorded

IV. PHOTOGRAPHS AND MAPS

01 TYPE	<input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>Gannett Fleming, Inc.</u> <small>(Name of organization or individual)</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>Gannett Fleming, Inc.</u>	

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE
MD

02 SITE NUMBER
408

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE
(Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE
($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE
($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE
(greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK

unknown (ft)

04 DIRECTION OF CONTAMINATED SOIL ZONE

unknown (ft)

05 SOIL pH

unknown

06 NET PRECIPITATION

5.37 (in)

07 ONE-YEAR 24-HOUR RAINFALL

2.7 (in)

08 SLOPE

SITE SLOPE

4 %

DIRECTION OF SITE SLOPE

South

TERRAIN AVERAGE SLOPE

4 %

09 FLOOD POTENTIAL

SITE IS IN 500 YEAR FLOOD PLAIN

10

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5-acre minimum)

ESTUARINE

OTHER

A. 0.05 (mi)

B. 0.03 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

unknown (mi)

ENDANGERED SPECIES: swamp pink

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

A. 0.2 (mi)

RESIDENTIAL AREAS: NATIONAL/STATE PARKS,
FORESTS, OR WILDLIFE RESERVES

B. 0.5 (mi)

AGRICULTURAL LANDS
PRIME AG LAND

C. unknown (mi)

AG LAND

D. unknown (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site topography is sloped slightly south. The site is allegedly filled-in wetlands. An embankment is located on the east, west, and southern perimeter. Wetlands are located on the west and south of the site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION****I. IDENTIFICATION-**01 STATE
MD02 SITE NUMBER-
408

ORIGINAL

1/5/93

II. CURRENT OPERATOR (Provide if different from owner)**OPERATOR'S PARENT COMPANY** (if applicable)

01 NAME None	02 D & B NUMBER	10 NAME	11 D & B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR (S) (List most recent first; provide if different from owner)**PREVIOUS OPERATOR'S PARENT COMPANIES** (if applicable)

01 NAME Drumco, Inc.	02 D & B NUMBER	10 NAME	11 D & B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, Etc.) 1427 Bank Street	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE		
05 CITY Baltimore	06 STATE MD	07 ZIP CODE 21231	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 13	09 NAME OF OWNER George P. Garratt III				

01 NAME	02 D & B NUMBER	10 NAME	11 D & B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

01 NAME	02 D & B NUMBER	10 NAME	11 D & B NUMBER		
03 STREET ADDRESS (P.O. Box, RFD #, Etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, Etc.)	13 SIC CODE		
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

**EPA****POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION****I. IDENTIFICATION**01 STATE
MD02 SITE NUMBER
408**II. CURRENT OWNER(S)****PARENT COMPANY (if applicable)**

01 NAME

George P. Garratt III

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

P. O. Box 1

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

Sykesville

06 STATE

MD

07 ZIP CODE

21748

14 CITY

15 STATE

16 ZIP CODE

01 NAME

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

01 NAME

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

01 NAME

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

III. PREVIOUS OWNERS(S) (List most recent first)**IV. REALTY OWNER(S) (if applicable, list most recent first)**

01 NAME

Numerous

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

01 NAME

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

01 NAME

02 D & B NUMBER

10 NAME

11 D & B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, Etc.)

04 SIC CODE

12 STREET ADDRESS (P.O. Box, RFD #, Etc.)

13 SIC CODE

05 CITY

06 STATE

07 ZIP CODE

14 CITY

15 STATE

16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Gannett Fleming, Inc. Screening Site Inspection. 28166.031. April 14, 1993.

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(PSC)

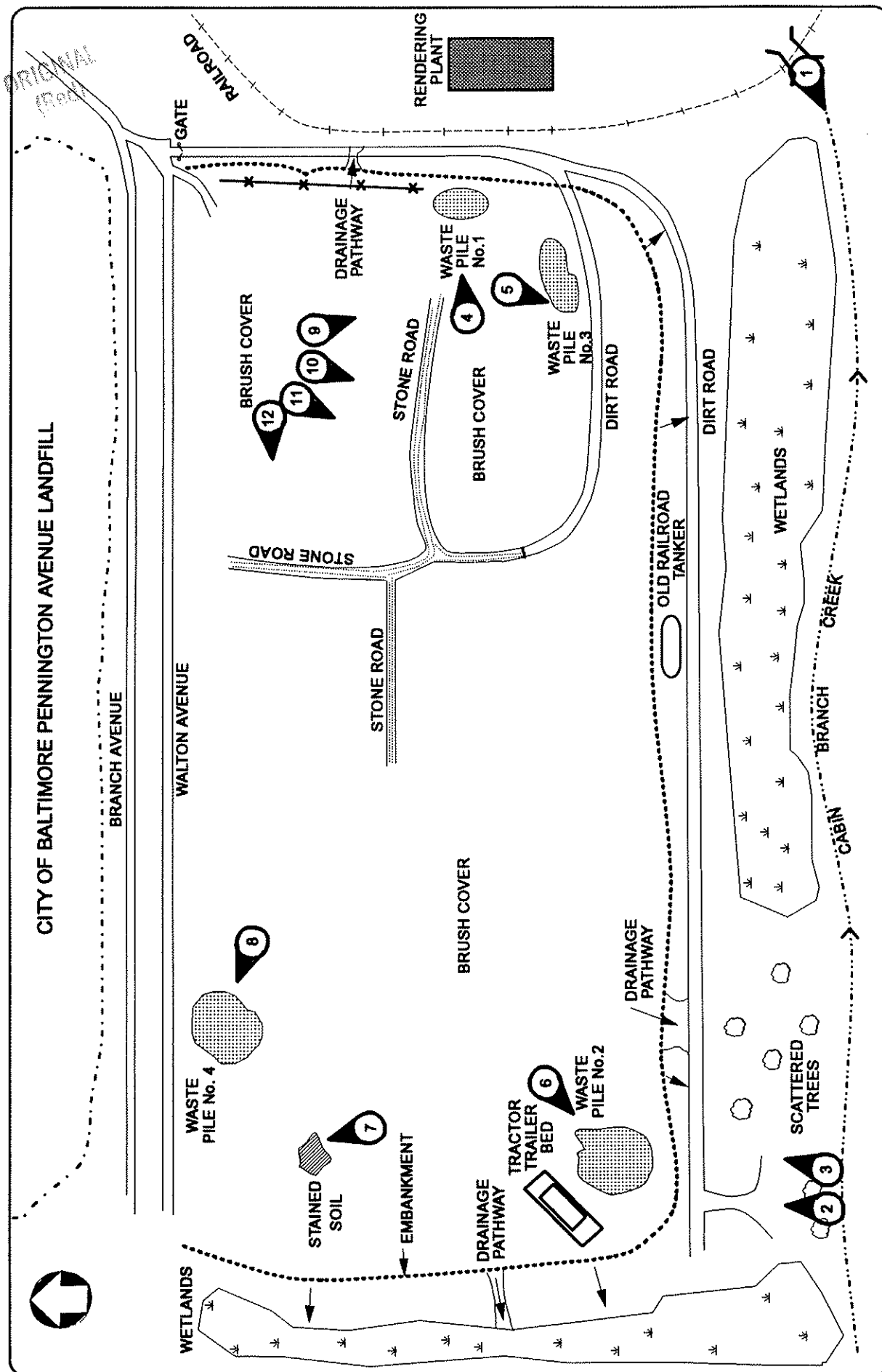
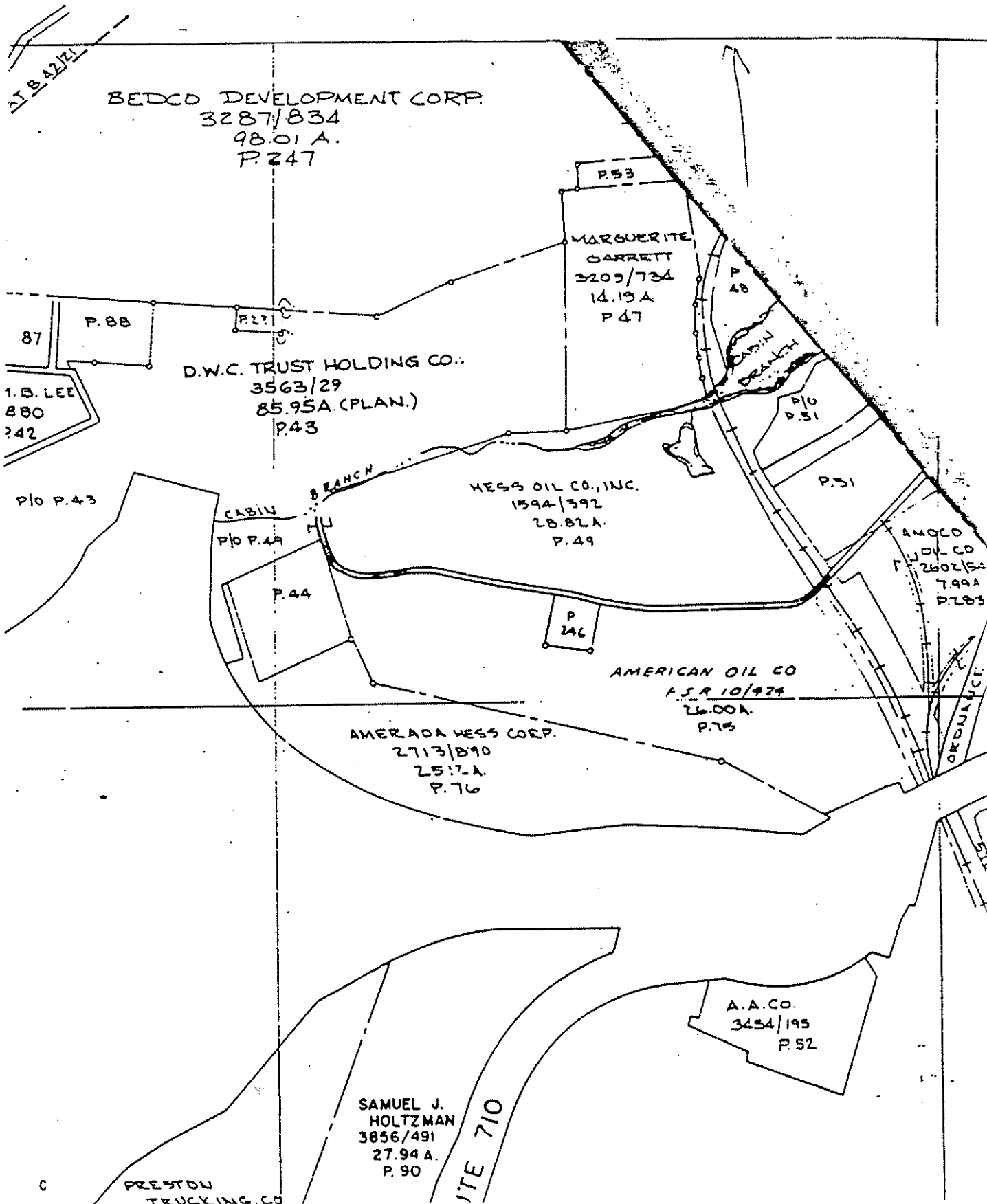


PHOTO LOCATION MAP
DRUMCO DRUM DUMP
BALTIMORE, MARYLAND

FIGURE 5-1

Original
(11/5/54)



BEDCO DEVELOPMENT CORP.
3287/834
98.01 A.
P.247

P.53
MARGUERITE
GARRETT
3209/734
14.19 A.
P.47

D.W.C. TRUST HOLDING CO.
3563/29
85.95A. (PLAN.)
P.43

HESS OIL CO., INC.
1594/392
28.82 A.
P.49

AMERICAN OIL CO
P.S.R. 10/434
26.00A.
P.75

AMERADA HESS CORP.
2713/890
25.12 A.
P.76

AMOCO
OIL CO
2602/52
7.99A
P.183

A.A.CO.
3454/195
P.52

SAMUEL J.
HOLTZMAN
3856/491
27.94 A.
P.90

PRESTON
TRUCKING CO

ITE 710

ORDNANCE

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(Red)

APPENDIX B:

DEED SEARCH DATA

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BOOK 1025 PAGE 704

a Notary Public of the State of Maryland, in and for the City of
Baltimore aforesaid, personally appeared Robert W. Thompson,
the Grantor above named, and acknowledged the foregoing deed
to be his act.

WITNESS my hand and notarial seal.

Laura M Thompson
Notary Public

Consideration none
Robert W Thompson



Mail to Robert Thompson

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BOOK 1025 PAGE 703

BEING THE SAME lot of ground described in a deed dated November 10, 1970 and recorded among the Land Records of Anne Arundel County in Liber WGL No. 2679, folio 29, etc.; and also recorded among the Land Records of Baltimore City in Liber RHB No. 3151, folio 803, etc. from David Garratt and Sons Company to Louise M. Garratt.

TOGETHER with and including an undivided fifty and sixty-nine one-hundredths per centum (50.69%) interest and estate of the undivided one-third interest and estate of the within named body corporate grantor in and to the right-of-way leading from the property hereinbefore described and extending over and along Walton Avenue, Branch Avenue, Arundel Boulevard and Aspen Street to Pennington Avenue, and the right to use said right-of-way in common with others as a means of ingress and egress. Said right-of-way as hereinbefore referred to, in its present location, having been used openly, notoriously, adversely and continuously for a period of over twenty years. And together with an undivided fifty and sixty-nine one-hundredths per centum (50.69%) interest and estate of the undivided one-third interest and estate of the within named body corporate grantor in and to the buildings and improvements thereupon and the rights, alleys, ways, waters, privileges, appurtenances and advantages to the same belonging or in anywise appertaining.

TO HAVE AND TO HOLD said undivided fifty and sixty-nine one-hundredths per centum (50.69%) interest and estate of the undivided one-third interest and estate of the within named body corporate grantor in and to said lot of ground and premises unto the said Emma C. Zuttermeister, Amy L. Goyne, June Susan Walmsley, Doris K. Schaumburg, Margaret K. Hinton, Richard Williams and Robert Williams, their heirs and assigns, in fee simple.

AND the said Grantor hereby covenants that he will warrant specially the property hereby conveyed; that he will execute such further assurance of the same as may be requisite.

WITNESS the hands and seals of the said Grantor.

TEST:

Laura M. Thompson

Robert W. Thompson (SEAL)
Robert W. Thompson
Personal Representative of
the Estate of Louise M. Garratt

STATE OF MARYLAND, CITY OF BALTIMORE, TO WIT:

I HEREBY CERTIFY that on this 9th day of December,
in the year nineteen hundred eighty-five before me a subscriber

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BOOK 1025 PAGE 702

in Baltimore City, State of Maryland, described as follows:

that is to say:

BEGINNING for the same on the south side of a street 40 feet wide, said south side of said street being located 560 feet south of and parallel with Alder Street, as laid down on the plat of South Baltimore, said place of beginning being distant 825 feet westerly from the west side of Pennington Avenue, and also at the beginning point of the tract of land containing 10.216 acres, described in a deed from ~~South Baltimore Harbor and Improvement Company of Anne Arundel County to Charles S. Walton and Co., INC.,~~ dated January 13, 1920, and recorded among the Land Records of Anne Arundel County in Liber W.N.W. No. 12, folio 432, etc., and among the Land Records of Baltimore City in Liber S.C.L. No. 3513, folio 199, etc., and running thence binding on the south side of said 40-foot street South 85 degrees and 51 minutes West 560 feet, thence South 4 degrees and 9 minutes East 200 feet to a point where formerly stood a white oak tree, and at the end of the third line of the tract of land described in a deed from John T. Shorter et al to Louis Greineisen, dated September 30, 1878, and recorded among said Land Records of Anne Arundel County in Liber S.H. No. 13, folio 348, etc., thence binding on the fourth line of said land and on the outline of the land formerly belonging to South Baltimore Harbor and Improvement Co., South 5 degrees and 55 minutes West 616 feet, thence in continuation of the direction of said last described line still South 5 degrees and 55 minutes West 245 feet to the North side of Cabin Branch as now located by survey of January, 1952, thence binding along the North side of Cabin Branch, as located by said survey, the twelve following courses and distances, namely: South 58 degrees East 47.60 feet, South 89 degrees and 52 minutes East 47 feet, South 82 degrees and 43 minutes East 53 feet, North 86 degrees and 31 minutes East 111.30 feet, North 77 degrees and 16 minutes East 34.30 feet, North 59 degrees and 26 minutes East 77.50 feet, North 51 degrees and 24 minutes East 47.50 feet, North 46 degrees and 26 minutes East 4 feet, North 72 degrees and 12 minutes East 88.40 feet, North 67 degrees and 43 minutes East 48 feet, North 74 degrees and 25 minutes East 50 feet, and North 84 degrees 39 minutes and 30 seconds East 50.58 feet to intersect the Westernmost line of the Right of Way of the Marley Neck Branch of the Baltimore and Ohio Railroad, thence binding along the Westernmost line of said Right of Way the two following courses and distances, namely: Northwesterly, by a line curving toward the North, with a radius of 1132.14 feet, and a chord which bears North 12 degrees 47 minutes and 30 seconds West 103.04 feet, the distance of 103.08 feet, and North 5 degrees and 8 minutes East 337.40 feet, to a pipe now set at the end of the ninth line of the tract of land containing 10.216 acres, described in the aforesaid deed from South Baltimore Harbor and Improvement Co. of Anne Arundel County to Charles S. Walton & Co., INC., and thence binding along the tenth or last line of said last mentioned tract of land, North 4 degrees and 9 minutes West 502.42 feet to the place of beginning. Containing 14.233 acres of land. The courses in the above description are referred to the True Meridian of the Topographical Survey of Baltimore City.

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BOOK 4025 PAGE 701

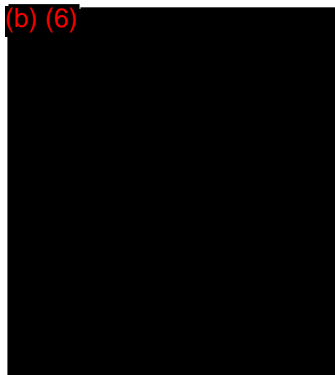
NO TITLE SEARCH

THIS DEED, Made this 9th day of December in the year one thousand nine hundred and eighty-five, by and between Robert W. Thompson, Personal Representative of the Estate of Louise M. Garratt, deceased, of the first part, and Emma Zuttermeister, Amy L. Gcyne, June Susan Walmsley, Doris K. Schaumburg, Margaret K. Hinton, Richard Williams and Robert Williams, parties of the second part.

WITNESSETH, That at the time of her death, Louise M. Garratt was the owner of an undivided fifty and sixty-nine one-hundredths per centum (50.69%) interest to a one-third interest in the property described below.

THAT in compliance of paragraph 3(a), (b), (c); of Louise M. Garratt's will filed in the Orphans' Court of Baltimore City, Number A 19475, the said Robert W. Thompson, Personal Representative does grant and convey the fifty and sixty-nine and one hundredths per centum (50.69%) interest to a one-third interest as follows:

(b) (6)



1/3
1/6
1/6
1/9
1/9
1/18
1/18

RECORDED FOR RECORD
ANNE ARUNDEL COUNTY
1986 FEB 21 AM 11:37
AUBREY COLLISON

THAT said property is situate partly in the 5th Election District of Anne Arundel County, Maryland, and partly

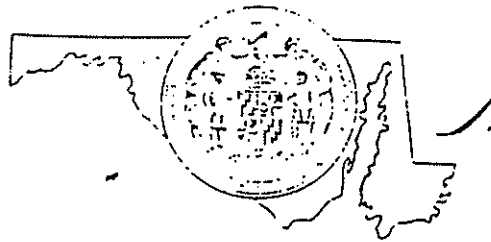
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APPENDIX C:

INSPECTION REPORTS

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State of



DEPARTMENT OF THE ENVIRONMENT

3500 Euting - Drive, Baltimore, Maryland 21211

Area Code 410 • 631- 3304

William Donald Schaefer
Governor

January 21, 1991

CERTIFIED/RESTRICTED DELIVERY

George Phillip Garrett, III
Drumco, Inc.
1427 Bank Street
Baltimore, Maryland 21231

RE: Drumco, Inc.

Dear Mr. Garrett:

Enclosed you will find a Complaint and Order resulting from violations of Maryland's law and regulations regarding Water Pollution Control and Solid Waste.

If you have any questions concerning this matter, please communicate with Mr. Arthur O'Connell, Acting Chief, Hazardous Waste Enforcement Division, Hazardous and Solid Waste Management Administration, at (301) 631-3400.

Sincerely,

Richard W. Collins

Richard W. Collins
Acting Director
Hazardous and Solid Waste
Management Administration

RWC/st

Enclosure

cc: Mr. Thomas C. Andrews
Michael C. Powell, Esquire
Mr. Harold L. Dye, Jr.
Mr. Arthur O'Connell

P 325 304 274

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse) (PS)

US GPO 1989-234-555

PS Form 3800, June 1985

Sent to George Phillip Garrett, III Drumco, Inc.	
Street and No. 1427 Bank St.	
P.O. Box or ZIP Code Balto. MD 21231	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom Date and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 1/22/91	

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IN THE MATTER OF:

Drumco, Inc.

DEPARTMENT
OF
THE ENVIRONMENT

SERVE ON:

George Phillip Garrett III
Drumco, Inc.
1427 Bank Street
Baltimore, Maryland 21231

Hazardous and Solid Waste
Management Administration
2500 Broening Highway
Baltimore, Maryland 21224

C-91-119

* * * * *

COMPLAINT

(1) WHEREAS, the State of Maryland, Department of the Environment, Hazardous and Solid Waste Management Administration, pursuant to the powers, duties and responsibilities vested in the Secretary of the Environment by Environment Article, Sections 1-301, 2-301 through 2-344, and 9-201 through 9-229, inclusive, Annotated Code of Maryland, and delegated to the Director, Hazardous and Solid Waste Management Administration (hereinafter, "the Administration") has reasonable grounds to believe that Drumco, Inc. (hereinafter, "Drumco") has violated Maryland law regarding Water Pollution Control and Solid Waste.

(2) WHEREAS, Drumco operates a drum recycling business at 1427 Bank Street in Baltimore City and stores its inventory of used and unwashed containers at a storage yard that straddles the Baltimore City and Anne Arundel County line next to the former Pennington Avenue landfill.

WATER POLLUTION CONTROL

(3) WHEREAS, the Administration, Enforcement Division, pursuant to its investigation of September 26, 1990 has determined that Drumco was on that date storing at its Pennington

Avenue storage yard, numerous fiber, metal and plastic containers containing oil, chemical and food residues.

(4) WHEREAS, the storage of these containers in an open and upright position allowed some of the containers to fill with rainwater and, in some cases, overflow onto the ground, thereby placing pollutants in a position likely to pollute waters of the State, in violation of Environment Article, Section 9-322 and 9-323 and COMAR 26.08.03.01.

SOLID WASTE

(5) WHEREAS, the improper storage of numerous used fiber containers in an area exposed to the elements has caused the containers to deteriorate and fall apart, creating a potential fire hazard that is exacerbated by the proximity of hundreds of plastic and metal containers containing chemical residues.

(6) WHEREAS, the disposal of hundreds of used fiber containers that were collected, transported and deposited at a location that is not permitted for the disposal of solid waste constitutes a violation of Environment Article, Section 9-204 and COMAR 26.04.07.

ORDER

THEREFORE, it is ORDERED by the Director of the Hazardous and Solid Waste Management Administration that Drumco shall:

1. Cease and desist the discharge of any liquid or solid residue from any container stored at the site.

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2. Within five (5) days collect all liquids from any rain-filled barrels that pose a threat of a release and dispose of the collected material in an appropriate manner within 10 days following analysis.
3. Within 15 days store all empty metal and plastic containers on their sides with all bungs and rings tightly closed in order to eliminate the collection and discharge of pollutants from the containers.
4. Within 30 days remove all deteriorated fiber drums to a facility permitted to accept solid waste.
5. Within 45 days collect, test and dispose of all stained and contaminated soil from the storage yard at a facility permitted to accept the material.

PROCEDURE FOR REQUESTING A HEARING
ON THE COMPLAINT

(A) Drumco has a right to a hearing pursuant to Section 7-261 of the Environment Article, and the Maryland Administrative Procedure Act as codified in Section 10-201 et seq. of the State Government Article of the Annotated Code of Maryland.

(B) An appearance before the Hearing Examiner constitutes an administrative hearing and Drumco has the rights of any party in a contested case provided by the Maryland Administrative Procedure Act.

(C) Drumco may obtain a hearing to contest either the Complaint, or Order by filing a written request for a hearing within ten (10) calendar days of receipt of this document in accordance with the Maryland Administrative Procedure Act, and Section 7-261 of the Environment Article. Such a request must

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include a brief statement of the factual and legal basis for the request. Unless a request for a hearing is filed in a timely manner, this Order shall be deemed final pursuant to Section 7-262 of the Environment Article. All such requests should include a copy of this document and should be sent to the Richard W. Collins, Acting Director, Hazardous and Solid Waste Management Administration, 2500 Broening Highway, Baltimore, Maryland 21224. A copy of the hearing request should be sent to the attorney who signed this document, at the Office of the Attorney General, Department of the Environment, 2500 Broening Highway, Baltimore, Maryland 21224.

(D) If you fail to timely request a hearing, or thereafter fail to attend or to participate in a pre-hearing conference, hearing that you have requested, or other stage of an adjudicative proceeding, then without further notice to you this Order will become final, you will default and lose your right to a hearing.

(E) Drumco must be represented by an attorney in an administrative hearing. The attorney must be admitted to the Bar in the State of Maryland or must be specifically admitted to the Maryland Bar pursuant to Maryland Rule 20 of the Maryland Rules governing admission to the Bar. Rule 20 governs special admission of out-of-state attorneys.

If you have any questions concerning this matter, please contact Mr. Arthur O'Connell, Acting Division Head, Hazardous

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(Rec'd)

Waste Enforcement Division, Hazardous and Solid Waste Management
Administration, at (301) 631-3400.

January 20, 1991
DATE

R.W. Collins
Richard W. Collins
Acting Director
Hazardous and Solid Waste
Management Administration

Approved as to form and legal
sufficiency this 11th day of
January, 1991.

Ann Marie DeBise
Assistant Attorney General

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APPENDIX D:
FIRST REMOVAL ACTION REPORT

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(Rec'd) (100)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
HAZARDOUS WASTE ENFORCEMENT DIVISION

MEMORANDUM

TO: Ron Nelson
FROM: Art OConnell ^{HC}
THROUGH: Harold Dye ^{HW}
SUBJECT: Drumco, Inc.

DATE: September 26, 1990

On September 25, 1990 Rick Johnson and I visited a drum storage yard that belongs to Drumco, Inc., a drum recycler that is located adjacent to the closed Pennington Ave. landfill. The inspection was conducted after we received several complaints concerning the storage yard that suggested that some of the drums might not be empty.

Once at the site Rick and I observed a trailer body that was open and filled with drums. A cursory inspection of the contents revealed a caustic material leaking from one of the drums and another with a split in the side that enabled us to determine that it too contained a caustic solution. The trailer was found to contain a total of fourteen drums in all. Following the discovery of the drums, I contacted the ECU and the Spill Response Section who met us at the site. Samples and photos have been collected and the trailer has been secured.

Following our examination of the trailer, I contacted Mr. Philip Garrett, the owner of the property, to find out what he knew about the drums. Mr. Garrett admitted that he generated the drums, transporting them to the site in an uncertified vehicle and stored them there without a permit. Mr. Garrett was also supposed to immediately make arrangements with Clean Harbors to remove and store the drums. Additionally, Mr. Garrett was asked to come into the office on September 26, 1990 to discuss the waste storage problem and to discuss corrective actions at the site which has a serious solid waste problem due to the financial problems with the company.

At approximately 12:00 P.M. Mr. Garretts' mother contacted this office and told us that her son was distraught to meet with us today. Consequently no meeting was held and there has been no resolution to the waste storage problem or the solid waste issues at the site. With no resolution forthcoming, we have stepped in and taken over the removal of the drums. The trailer has been secured and A&A has been hired to complete the removal of the drums. I do not believe a negotiated settlement with Mr. Garrett

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is going to happen anytime soon. In fact, I believe Mr. Garrett may be close to bankruptcy at this time (Garrett owes the State monies pursuant to a civil penalty assessment earlier this year).

I will keep you posted on the case as new information is developed.

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STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
2500 BROENING HIGHWAY

REPORT OF OBSERVATIONS

TYPE OF INSPECTION Follow up DATE 9/27/90
FACILITY NAME Drumco Pennington Ave.

On September 27, 1990 I went to the Drumco storage yard to check on the progress of the cleanup. The first employees for A&A Environmental arrived at 9:00 while the fork lift and the rest of the crew (two laborers and a supervisor) arrived at 10:30. The first drum was removed at 10:43. Several photos of the storage yard were taken to document the spillage from some of the drums.

Following my visit to the site I returned to the office where I called Mr. Garratt at his office. Mr. Garratt told me that he could not get anyone to handle the drums unless he paid them first (he does not have the money). I told him that we had already hired a contractor after he had failed show up for our meeting or make the needed arrangements. I also told Mr. Garratt that we would send him a bill when the work was completed.

Mr. Garratt told me that he had applied for an \$80,000 loan which he expected to obtain within the next 10 days. When he received the check, he intended to hire additional workers to clean out the Bank Street facility so he could get a tenant into the building. When that occurred, he intended to start moving to the Pennington Ave. location where he hoped to continue his drum business by selling the inventory of metal drums to other recyclers and continue to handle only new fiber containers. According to Garratt, the Pennington Ave. site consisted of about 14 acres with the majority in Anne Arundel Co. He intends to sell the majority the site once he gets it clean, keeping two or three acres to continue the business.

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Page

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
2500 BROENING HIGHWAY

REPORT OF OBSERVATIONS

TYPE OF INSPECTION Follow up DATE 9/28/90
FACILITY NAME Drumco Pennington Ave.

At 0830 hrs. I met A&A Environmental at the Pennington Ave site to check on the progress of the job. The contractor told me that they found and additional 30 full drums on the front of the truck under the empty blue poly drums. An inspection of the drums indicated that they contained the same caustic material that was found in the other containers in the front of the truck. Additional photos of the vehicle were taken. A&A will remove the additional containers and send them to Clean Harbors.

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APPENDIX E:
COMPLAINT AND ORDER

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APPENDIX F: INSPECTION REPORTS

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
2500 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

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TYPE OF INSPECTION Follow-up DATE February 5, 1991

FACILITY Dremco

REMARKS:

An inspection of the storage yard continued to document a deterioration of conditions with more drums standing on end and filling with water and additional spillage on the ground from the indiscriminate dumping of the residue in the drums.

During today's inspection a number of spills were documented throughout the yard:

1) There was a brown liquid mixed with standing water next to the entrance road. The material was leaking from an unsealed poly drum labeled as containing Iodinated glycerine. One photo of the drums and the associated spillage was taken.

2) A drum containing a foot of liquid that was labeled benzaldehyde was examined and found to contain rainwater.

An accumulation of drums that had contained caustic flake were stored toward the rear of the property. Many of the containers were open and were filled with varying amounts of water. One sample(AOC2591-01) was collected from one of the containers. The field ph of the liquid was >12.

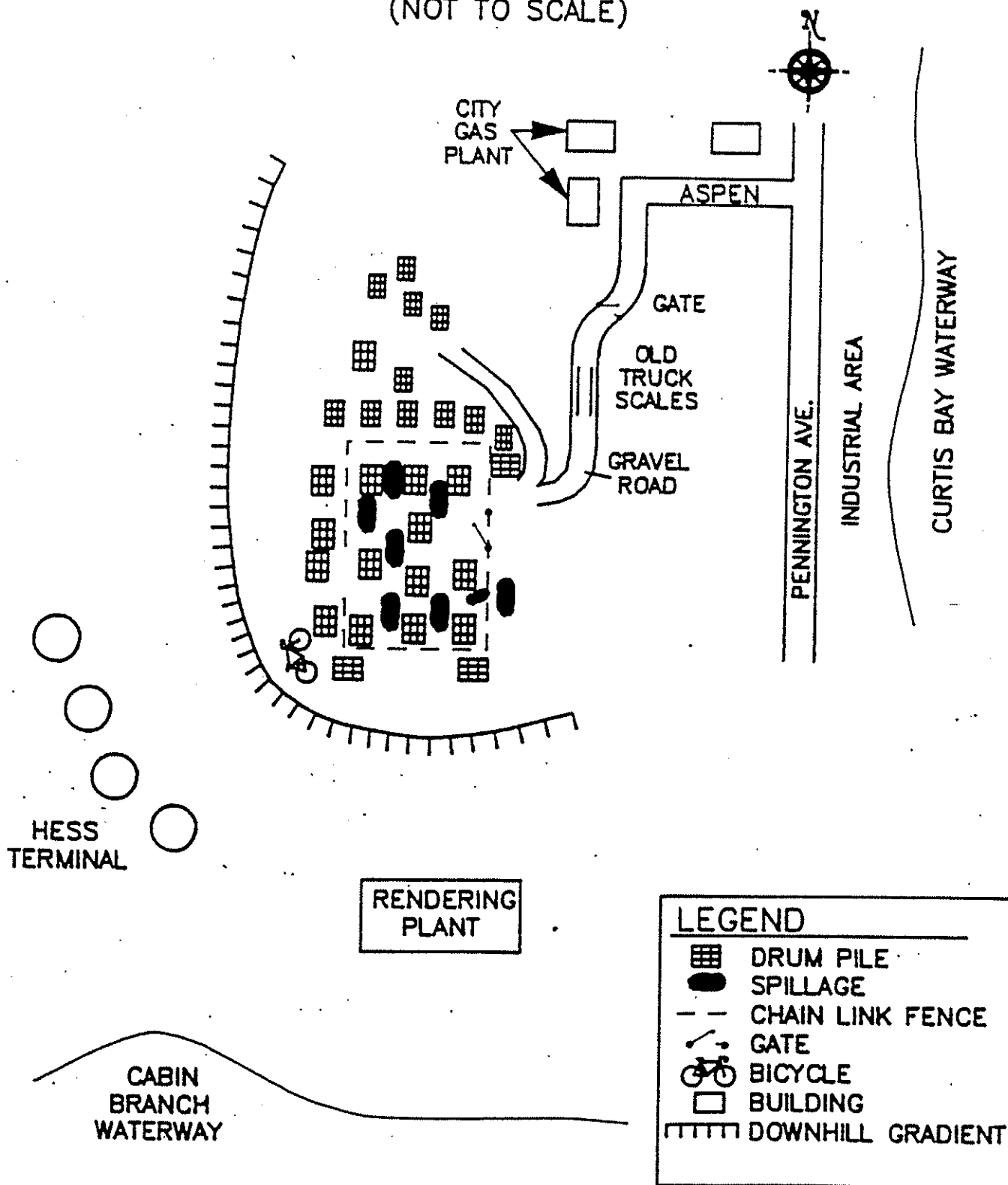
4) There was a saturated area next to the caustic drums that consisted of a sticky brown liquid that originated from a drum labeled polysulfide polymer manufactured by Thiokol, Inc.

5) There were two drums stored in the weeds near the rear of the property that again contained liquid. One of these drums was a stainless steel container which are usually used to hold nitric acid. No sample was collected due the lack of adequate safety gear.

6) There was a green pile of sludge on the ground next to a drum labeled extract of pepper. there was and additional five drums of this same material turned on end next to the spilled material.

7) There was an area of oil saturated soil stored next to the fence of the storage yard. The oil was emanating from a row of drums inside the storage area.

SITE SKETCH DRUMCO, DRUM DUMP SITE BALTIMORE, MARYLAND (NOT TO SCALE)



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APPENDIX G:
DRUM SAMPLING ANALYTICAL DATA REPORT

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
2500 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TYPE OF INSPECTION Follow up DATE 1/21/91
FACILITY Drumco Pennington Ave
REMARKS:

Personnel: John Myers
Alan Williams
Mark Cox

A total of Six samples were collected from three locations in the storage area. All of the samples were analyzed for ignitability and corrosivity in order to quickly characterize the material as hazardous or non-hazardous.

0948 hrs. AX03219101- Was collected from a tan drum that was streaked with red paint. The drum contained a tan liquid that was 9 inches from the top of the drum; Hnu readings were 350. The sample collected from the container separated into two phases with the top remaining tan and a red paint-like sludge settling out on the bottom. Spillage from the drum that was noticeable when the container was righted had a distinct toluene-like odor.

1003 hrs. AX03219102- Was collected from a black drum that was labeled as containing white hot line traffic paint. the drum was opened and found to contain a black oily liquid with Hnu readings of approximately 200.

1018 hrs. AX03219103- Was collected from a blue drum with a yellow lid. The material in the drum was a reddish brown liquid that eventually separated into two separate layers. Hnu readings from the container were 150 ppm.

1015 hrs. AX03219104- Was collected from a black drum with a white lid that also had a flammable liquid label on the drum. The inside of the drum had a yellow stain that resembled paint inside the container. the drum was full to 10 inches from the top. H nu readings were 250 ppm.

1130 hrs. AX03219105- Was collected from a black drum that was labeled with white writing that said MZ8228802. The container contained a red liquid that appeared to be paint and eventually settled into two layers. Hnu readings were 350 ppm.

1145 hrs. AX03219106- Was a greenish solid that was collected from a blue drum located outside of the fenced storage yard. The material had a field ph of 14 and had several inches of liquid on top of the material. Of the four drums in the same row examined, two of the drums had similar material with the same field ph.

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SAMPLE DATA SUMMARY PACKAGE

Table of Contents

1. Narrative
2. Sample Traffic Report
3. Results of Analysis of Samples
4. Surrogate Recovery Summary
5. Method Blank Summary
6. GC/MS Tuning and Mass Calibration -
Bromofluorobenzene (BFB)
7. Initial and Continuing Calibration Check Summary
8. Internal Standard Area Summary
9. Chromatograms of Samples and Method Blanks

1001
1001

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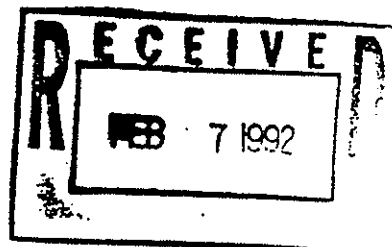
1. Narrative

Maryland
spectral
Services, INC

ORIGINAL
Analytical Chemistry Services

29 January 1992

Mr. Bernard Bigham
Division Chief
Maryland Department of the Environment
LUST Projects Division
Building #40
2500 Broening Highway
Baltimore, Maryland 21224



Dear Bernie:

We are pleased to report results of analysis of samples collected in support of the Enforcement Division's Drumco Pennington Avenue project 21 March 1991 by Mr. Alex Cox of that Division's staff. We hope you will entrust this report to the appropriate personnel.

We present the results in an abridged USEPA Contract Laboratory Program format.

Of course, should any question arise, please do not hesitate to contact us.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Kenneth K. Gill, Jr.".

Kenneth K. Gill, Jr.

Enclosure

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(2ed)

MARYLAND SPECTRAL SERVICES, INC.
1500 CATON CENTER DRIVE, BALTIMORE, MD 21227

LABORATORY RESULTS

SAMPLE DATA SUMMARY PACKAGE

**RESULTS OF GAS CHROMATOGRAPHY/MASS SPECTROMETRY
VOLATILE ORGANICS ANALYSIS, AND CORROSIVITY
AND FLASHPOINT ANALYSIS OF**

DRUMCO PENNINGTON AVENUE PROJECT LIQUID SAMPLES

RECEIVED 21 MARCH 1991

PREPARED FOR

**HAZARDOUS WASTE ENFORCEMENT DIVISION
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
MARYLAND DEPARTMENT OF THE ENVIRONMENT**

29 JANUARY 1992

NARRATIVE

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(1-87)

Laboratory Name: Maryland Spectral Services, Inc. (MSS)

Date Samples Delivered to MSS Laboratory: 21 March 1991

Project: MDE-HSWMA Enforcement Division ---Drumco
Pennington Ave. Baltimore, MD

Project Manager: Mr. Art O'Connell

Results for the following samples are included in this data package:

Sample ID	MSS ID	Matrix	Analysis
AX032191-01	910321-09	Liquid	Flashpoint, Corrosivity
AX032191-02	910321-10	Liquid	Flashpoint, Corrosivity
AX032191-03	910321-11	Liquid	Flashpoint, Corrosivity
AX032191-04	910321-12	Liquid	Flashpoint, Corrosivity
AX032191-05	910321-13	Liquid	Flashpoint, Corrosivity, VOC
AX032191-06	910321-14	Liquid	Flashpoint, Corrosivity

Volatile Organics

Sample "AX032191-05" (top phase) was analyzed for the Volatile Organics Target Compound List established by the USEPA Contract Laboratory Program (CLP) statement of Work (1/87) by USEPA Method 8240, using capillary chromatography. The sample was extracted with Methanol and diluted with Laboratory-pure water prior to analysis.

A table of results for the target compounds can be found in Section 3 of this report.

EPA CLP Surrogate recovery criteria were met for all analyses.

All samples were analyzed within acceptable holding times.

Chromatograms of samples and method blank analyses are presented in Section 9 of this report and are labeled for target compounds found (if any), together with Internal Standards (IS) and Surrogate Spiking Compounds (SS).

Flashpoint

The samples were analyzed for Flashpoint by Phase Separation Science, Inc., Baltimore, MD according to USEPA Method 1020 (OSW-846). Each of the two phases exhibited by samples "AX032191-01", "AX032191-02", "AX032191-03", and "AX032191-05" were analyzed separately.

A table of results for the target compounds can be found in Section 3 of this report.

Corrosivity (pH Value)

The phase believed to be an aqueous phase was analyzed for each sample by EPA Method 9040 (Electrometric Method).

ORIGINAL
(Red)

STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
2500 BROENING HIGHWAY

REPORT OF OBSERVATIONS

TYPE OF INSPECTION Complaint Investigation DATE September 25, 1990
FACILITY NAME Drumco, Inc. Pennington Ave.

On September 25, 1990 Richard Johnson and I responded to a complaint at the Drumco, Inc., storage yard on Pennington Ave. after receiving information concerning the possible storage of waste at the site.

Arriving at the site at approximately 10:45 AM, we immediately observed a detached tractor trailer body, bearing Maine license tag F-62129 with an expiration date of Feb 1989, just to the left of the access road. An examination of the trailer, which was open, revealed a full load of 55-gallon metal and blue plastic drums stacked in two layers. The open-headed metal drums were located on the bottom and the blue plastic drums were stacked on top in the rear of the vehicle.

An examination of the containers next to the door revealed a leak of a semisolid salt-like material from the lower seam of one of the drums. A cursory check of the material with litmus paper indicated a high pH in the range of 13-14. A second drum next to the door had a rent in the side approximately four inches from the bottom. Again, the insertion of a piece of litmus paper revealed the contents had pH in the range of 13-14, which indicated the presence of a hazardous material. A cursory inspection of the containers in the front of the trailer revealed that all of them were filled and unmovable. Based on our the discovery of the full containers, we contacted the Environmental Crimes Unit and the Spill Response section for further assistance.

After the discovery of the drums I contacted inspector Mansoor Zakai and instructed him to go to the Drumco plant on Bank Street to determine if there were any problems at that facility and to see if Mr. Philip Garratt, the owner, was available. I further requested that if Mr. Garratt was available that he contact me immediately to discuss the conditions we observed at the Pennington Ave. location.

At approximately 11:30 AM. I received a call from Mr. Garratt while we were still at the storage yard. Mr. Garratt acknowledged that there were indeed drums of hazardous waste on the trailer and he admitted that he had generated the material and transported it to the Pennington Ave. storage yard. He told me that he moved the material here because he did not have the money to dispose of it properly. Additionally, he told me that there were about thirty (30) drums of waste which he described as nail polish from Noxell

Corp. (Garratt claimed he was not aware of any caustic waste). According to Garratt, the nail polish had been collected from two trailer loads of drums that he had received from Noxell and processed at his cousin's company, the Gordon Garratt Co., 2815 Waterview Ave, in Baltimore. According to his explanation, the nail polish was poured from the "empty" drums prior to processing. The accumulated waste was then returned to him with the reconditioned drums. Mr. Garratt told me that he has been trying to get Noxell to share part of the cost of disposal because he believed the drums contained too much residue. He did, however, acknowledge that the proper disposal of the waste was his responsibility. Finally, Garratt told me he was having financial problems but he expected to have them straighten out within the next week when he received an \$80,000.00 loan. At that time, he expected to finish cleaning out his Bank Street facility, rent the building to a new tenant, and move his operation to the Pennington Ave location where he would clean out the yard prior to selling off some of the property. I then told Mr. Garratt that he would have to make immediate arrangements with a hazardous waste facility to have the waste removed. He also agreed to come into our office the next day at 1:30 PM to discuss the incident and the resolution of the water pollution and solid waste problems at the yard. When I finished speaking with Mr. Garratt I instructed inspector Zakai, who was still in Mr. Garratt's office, to issue a site complaint to the company for the improper storage of the waste at the yard.

An inspection of the trailer by Mark Cox and Alan Williams, Spill Response Section, revealed that 14 of the open-headed drums were full. An examination of the drums made during sampling indicated that they contained a semisolid gray material with a soap-like odor. Three samples were collected. A more careful examination of the truck and its contents would have to wait until the vehicle was unloaded. There was no sign of the additional drums reported by Mr. Garratt. The truck was then closed, labeled with hazard tape and padlocked.

A. O'Connell



STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
ENFORCEMENT PROGRAM
2500 BROENING HIGHWAY
BALTIMORE, MARYLAND 21224
(301) 631-3386

ORIGINAL
(Red)

SITE COMPLAINT

NUMBER	DATE
SC-0-91-058	9/25/90

Name of violator: Drumco, Inc
Address: 1427 Park Street Baltimore, MD 21231
County: Baltimore City Phone: (301) 522-4447
Violation Type (with reference to the Annotated Code of Maryland)
☐ Water Pollution Control and Abatement (Environment Article, Sections 9-30 1 through 9-344)
☐ Oil Control (Environment Article, Sections 4-401 through 4-418)
☐ Controlled Hazardous Substances (Environment Article, Sections 7-201 through 7-268)
☐ Landfills and Sludge Disposal (Environment Article, Section 9-204)
☐ Other
Specifically: Storing hazardous waste on its Curtis Bay site
(off Pennington Ave, address unknown) without meeting the
storage requirement of COMAR 26.13.05.09 and 26.13.03.05

You are hereby advised the following corrective actions are necessary. Compliance with the corrective actions contained herein does not preclude the Department from imposing further requirements. In addition, the Department reserves the right to impose sanctions and penalties for the underlying violation(s).

Immediately transfer all drums of hazardous waste to
a permitted treatment, disposal or storage site.

The above described violation(s) may result in the Department seeking legal sanctions against you, including the imposition of civil and/or criminal penalties. Continuation of the violation(s) or failure to take the corrective actions described above may result in additional sanctions or penalties.

I hereby acknowledge receipt of this Site Complaint by my signature, which is not an admission of guilt.

Issued to: [Signature]

Title: [Signature]

Issued by: Martin W. Walsh, Jr.
Secretary
Department of the Environment

Issued by: [Signature]
Inspector

Phone: 631-3400

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Laboratory Administration
201 W. Preston St.
P.O. Box 2355, Baltimore, Maryland 21203
J. Mehser Joseph, Ph.D., Director

LAB. NO. _____

ORIGINAL
(Red)

HAZARDOUS WASTE LABORATORY
General Inorganic Analysis Report Form

Priority 1/27/90

Collector _____ Name/Time/Date _____ Sample Source _____

Sample ID no. 42590-01 Preservative Used none

Sample Alert HIGH - 11.0 pH

Specify Program:

RCRA: ☒ NPDES: _____ OTHER: _____

Chain of Custody Sample Possession

From: R. JOHNSON 1530 7/25/90 To: John Lee 1530 9/25/90

From: _____ Name/Time/Date _____ To: _____ Name/Time/Date _____

<input checked="" type="checkbox"/> pH <u>13.30</u>	_____ Chloride _____ ppm-Cl
_____ Conductivity-umhos/cm <u>3.0</u> @25°C	_____ Fluoride _____ ppm-F
_____ Turbidity _____ NTU	_____ Iodide _____ ppm-I
_____ Color _____ Color	_____ Cyanide, total _____ ppm-CN
_____ Residue non-filterable _____ ppm	_____ Cyanide, reactive _____ ppm-CN
_____ Residue filterable _____ ppm	_____ Cyanide, amenable to _____
_____ Residue, total _____ ppm	_____ chlorination _____ ppm-CN
_____ Residue volatile _____ ppm	_____ Phenol, 4-AAP _____ ppm-phenol
_____ Specific gravity _____ @25°C	_____ Acidity, total _____ ppm-CaCO ₃
_____ Free liquid test _____ %	_____ Alkalinity _____ ppm-CaCO ₃
_____ sivity _____ pH	_____ Hardness, total _____ ppm-CaCO ₃
_____ Ignitability _____ °C	_____ Carbon Dioxide _____ ppm-CaCO ₃
_____ Oil and Grease _____ ppm	_____ Methylene Blue Active Substance _____ ppm-MBAS
_____ Ammonia _____ ppm-N	_____ Chlorine, total _____ ppm-Cl
_____ Kjeldahl Nitrogen _____ ppm-N	_____ Chlorine, free _____ ppm-Cl
_____ Nitrite _____ ppm-N	_____ Tannin _____ ppm
_____ Nitrate plus Nitrate _____ ppm-N	_____ Salinity _____ 0/00
_____ Phosphate, ortho _____ ppm-P	
_____ Phosphate, total _____ ppm-P	
_____ Sulfate _____ ppm-SO ₄	
_____ Sulfite _____ ppm-SO ₃	
_____ Sulfide _____ ppm-S	
_____ Sulfide, reactive _____ ppm-S	
_____ Bromide _____ ppm-Br	

RECEIVED

OCT 5 1990

HSWMA
ENFORCEMENT PROGRAM

Section Chief: mg

Date: 10/2/90

Verified By: BH

Authorized By: _____

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Laboratories Administration
201 W. Preston St.
P.O. Box 2355, Baltimore, Maryland 21203
J. Mehnen Joseph, Ph.D., Director

ORIGINAL
(Red)

LAB. NO. _____

HAZARDOUS WASTE LABORATORY
General Inorganic Analysis Report Form

Priority ROUTED

Collector _____ Name/Time/Date _____ Sample Source _____

Sample ID no. AX 82570-02 Preservative Used None

Sample Alert HIGH FIELD pH

Specify Program:

RCRA: ☒

NPDES: _____

OTHER: _____

Chain of Custody Sample Possession

From: R. JOHNSON 1530 7/25/90 To: Janis Auld 1530 7-25-90
Name/Time/Date Name/Time/Date

From: _____ To: _____
Name/Time/Date Name/Time/Date

<input checked="" type="checkbox"/> pH	<u>12.85</u>	_____ Chloride	_____ ppm-Cl
_____ Conductivity-umhos/cm	_____ @25°C	_____ Fluoride	_____ ppm-F
_____ Turbidity	_____ NTU	_____ Iodide	_____ ppm-I
_____ Color	_____ Color	_____ Cyanide, total	_____ ppm-CN
_____ Residue non-filterable	_____ ppm	_____ Cyanide, reactive	_____ ppm-CN
_____ Residue filterable	_____ ppm	_____ Cyanide, amenable to	_____ ppm-CN
_____ Residue, total	_____ ppm	_____ chlorination	_____ ppm-CN
_____ Residue volatile	_____ ppm	_____ Phenol, 4-AAP	_____ ppm-phenol
_____ Specific gravity	_____ @25°C	_____ Acidity, total	_____ ppm-CaCo ₃
_____ Free liquid test	_____ %	_____ Alkalinity	_____ ppm-CaCo ₃
_____ Corrosivity	_____ pH	_____ Hardness, total	_____ ppm-Ca
_____ Ignitability	_____ °C	_____ Carbon Dioxide	_____ ppm-CaCo ₃
_____ Oil and Grease	_____ ppm	_____ Methylene Blue Active Substance	_____ ppm-MBAS
_____ Ammonia	_____ ppm-N	_____ Chlorine, total	_____ ppm-Cl
_____ Kjeldahl Nitrogen	_____ ppm-N	_____ Chlorine, free	_____ ppm-Cl
_____ Nitrite	_____ ppm-N	_____ Tannin	_____ ppm
_____ Nitrate plus Nitrate	_____ ppm-N	_____ Salinity	_____ 0/00
_____ Phosphate, ortho	_____ ppm-P		
_____ Phosphate, total	_____ ppm-P		
_____ Sulfate	_____ ppm-SO ₄		
_____ Sulfite	_____ ppm-SO ₃		
_____ Sulfide	_____ ppm-S		
_____ Sulfide, reactive	_____ ppm-S		
_____ Bromide	_____ ppm-Br		

RECEIVED

OCT 5 1990

HSWMA
ENFORCEMENT PROGRAM

Section Chief: mg

Date: 10/2/90

Verified By: Boa

Authorized By: _____

STATE OF MARYLAND
DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Laboratories Administration
201 W. Preston St.
P.O. Box 2355, Baltimore, Maryland 21203
J. Mehser Joseph, Ph.D., Director

LAB. NO. _____

HAZARDOUS WASTE LABORATORY
General Inorganic Analysis Report Form

Priority 7/17/90

Collector _____
Name/Time/Date

Sample Source _____

Sample ID no. AY 092590-03

Preservative Used NONE

Sample Alert HIGH FIELD pH

Specify Program:

RCRA: ☒

NPDES: _____

OTHER: _____

Chain of Custody Sample Possession

From: R. J. WINSLOW 1530 9/25/90

Name/Time/Date

To: Tonia Rusk 15:30 9-25-90

Name/Time/Date

From: _____
Name/Time/Date

To: _____
Name/Time/Date

<input checked="" type="checkbox"/> pH	<u>13.35</u>	_____ Chloride	_____ ppm-Cl
Conductivity-umhos/cm	@25°C	_____ Fluoride	_____ ppm-F
Turbidity	NTU	_____ Iodide	_____ ppm-I
Color	Color	_____ Cyanide, total	_____ ppm-CN
Residue non-filterable	ppm	_____ Cyanide, reactive	_____ ppm-CN
Residue filterable	ppm	_____ Cyanide, amenable to	_____ ppm-CN
Residue, total	ppm	chlorination	_____ ppm-CN
Residue volatile	ppm	_____ Phenol, 4-AAP	_____ ppm-phenol
Specific gravity	@25°C	_____ Acidity, total	_____ ppm-CaCO ₃
Free liquid test	%	_____ Alkalinity	_____ ppm-CaCO ₃
_____ Acidity	pH	_____ Hardness, total	_____ ppm-CaCO ₃
Ignitability	°C	_____ Carbon Dioxide	_____ ppm-CaCO ₃
Oil and Grease	ppm	_____ Methylene Blue Active Substance	_____ ppm-MBAS
Ammonia	ppm-N	_____ Chlorine, total	_____ ppm-Cl
Kjeldahl Nitrogen	ppm-N	_____ Chlorine, free	_____ ppm-Cl
Nitrite	ppm-N	_____ Tannin	_____ ppm
Nitrate plus Nitrate	ppm-N	_____ Salinity	_____ 0/00
Phosphate, ortho	ppm-P		
Phosphate, total	ppm-P		
Sulfate	ppm-SO ₄		
Sulfite	ppm-SO ₃		
Sulfide	ppm-S		
Sulfide, reactive	ppm-S		
Bromide	ppm-Br		

RECEIVED

OCT 5 1990

HSWMA

ENFORCEMENT PROGRAM

Section Chief: mg

Date: 10/2/90

Verified By: LBH

Authorized By: _____

NARRATIVE (Continued)

ORIGINAL
(P-4)

Results are presented in Section 3.

RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE
HAS BEEN AUTHORIZED BY THE LABORATORY MANAGER OR HIS
DESIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURE:

Kenneth K. Gill, Jr.

Kenneth K. Gill, Jr.

DATE:

1-29-92

29 January 1992

ORIGINAL
(Red)

2. Sample Traffic Report

GRAM:

STATE OF MARYLAND
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Laboratories Administration
201 W. Preston Street
P.O. Box 2355, Baltimore, Maryland 21203
J. Mehsen Joseph, Ph.D., Director

91-0321-09-14
LAB NO.

ORIGINAL
(Red)

GAS CHROMATOGRAPHY-MASS SPECTROMETRY LABORATORY
MULTISAMPLE SUBMISSION FORM

DWA _____
IA - X
DES _____
T _____
ST _____
IER _____

COLLECTOR: ARTHUR O'CONNELL 0948 0321/91
(NAME, TIME, DATE)

SAMPLE SOURCE: DRUMCO Pennington Ave

TITLE NUMBER: see below

PRESERVATION USED: ICE

CHAIN OF CUSTODY: FROM: Arthur O'Connell 2358 3/21/91 TO: Arthur O'Connell 1531 hrs 3/21/91
(NAME, TIME, DATE) (NAME, TIME, DATE)

FROM: Ellen Babcock 1531 hrs 3/21/91

FROM: Ellen Babcock 1607 hrs 3/21/91 LL Hill 1607
1531 3/21/91

MARKS: _____

SAMPLE ID NUMBER

SAMPLE ID NUMBER

AX 032191 - 01

11. _____

AX 032191 - 02

12. _____

AX 032191 - 03

13. _____

AX 032191 - 04

14. _____

AX 032191 - 05

15. _____

AX 032191 - 06

16. _____

17. _____

18. _____

19. _____

20. _____

1115E

1115E
1115E
1115E

CHAIN OF CUSTODY RECORD

PROJECT NO.

PROJECT NAME

Drumco - Remington Ave

SAMPLERS: (Signature)

(Printed)

FIELD
SAMPLE
NUMBER

DATE

TIME

COMP.

GRAB

STATION LOCATION

NO. OF CONTAINERS

PARAMETERS

REMARKS

MSS #

91-0321-09

-10

-11

-12

-13

-14

AX032191-01 3/21/11

AX032191-02

AX032191-03

AX032191-04

AX032191-05

AX032191-06

↓

Relinquished by: (Signature)

Date / Time

Received by: (Signature)

Relinquished by: (Signature)

Date / Time

Received by: (Signature)

(b) (2)

3/22/11 10:30

(b) (2)

(b) (2)

3-22-91 170045

(b) (2)

Relinquished by: (Signature)

Date / Time

Received for Laboratory by:

Date / Time

Remarks

(b) (2)

3/21/11 1030

(b) (2)

(b) (2)

3/21/11 4:30 PM

(b) (2)

Richard Long Song

CHAIN OF CUSTODY RECORD

[illegible]

3. Results of Analysis of Samples

ORIGINAL
10-20

MARYLAND SPECTRAL SERVICES, INC.
1500 Caton Center Drive Baltimore, MD 21227

VOLATILE ORGANICS BY EPA GC/MS METHOD 8240

CLIENT SAMPLE ID: AX032191-05 VBLK0331B1
 DRUMCO
 LAB SAMPLE ID: 91032113 METHOD_BLANK
 SAMPLE DATE: 03/21/91
 RECEIVED DATE: 03/21/91
 ANALYSIS DATE: 03/31/91 03/31/91
 FILE NAME: 032113DD 0331VBLKB1
 INSTRUMENT ID: MSB MSB
 MATRIX: LIQUID WATER
 UNITS: MG/KG MG/KG
 DILUTION FACTOR: 521X 1.0

VOLATILE COMPOUNDS

Acetone	49700	0.010 U
Benzene	2610 U	0.005 U
Bromodichloromethane	2610 U	0.005 U
Bromoform	2610 U	0.005 U
Bromomethane	5210 U	0.010 U
2-Butanone	5210 U	0.010 U
Carbon Disulfide	2610 U	0.005 U
Carbon Tetrachloride	2610 U	0.005 U
Chlorobenzene	2610 U	0.005 U
Chloroethane	5210 U	0.010 U
Chloroform	2610 U	0.005 U
Chloromethane	5210 U	0.010 U
Dibromochloromethane	2610 U	0.005 U
1,2-Dichloroethane	2610 U	0.005 U
1,1-Dichloroethane	2610 U	0.005 U
1,1-Dichloroethene	2610 U	0.005 U
1,2-Dichloroethene (total)	2610 U	0.005 U
1,2-Dichloropropane	2610 U	0.005 U
trans-1,3-Dichloropropene	2610 U	0.005 U
cis-1,3-Dichloropropene	2610 U	0.005 U
Ethylbenzene	2610 U	0.005 U
2-Hexanone	5210 U	0.010 U
4-Methyl-2-Pentanone	5210 U	0.010 U
Methylene Chloride	2610 U	0.005 U
Styrene	2610 U	0.005 U
1,1,2,2-Tetrachloroethane	2610 U	0.005 U
Tetrachloroethene	2610 U	0.005 U
Toluene	81800	0.005 U
1,1,1-Trichloroethane	2610 U	0.005 U
1,1,2-Trichloroethane	2610 U	0.005 U
Trichloroethene	2610 U	0.005 U
Vinyl Acetate	5210 U	0.010 U
Vinyl Chloride	5210 U	0.010 U
Xylene (total)	2610 U	0.005 U

B - Detected in Lab Blank. U - Below Reported Quantitation Level. J - Estimated Value.

REPORT OF ANALYSIS

CLIENT: STATE OF MARYLAND DEPARTMENT OF THE ENVIRONMENT
HAZARDOUS AND SOLID WASTE MANAGEMENT ADMINISTRATION
PROJECT: DRUMCO, PENNINGTON AVENUE

DATE COLLECTED: 21 MARCH 1991
DATE RECEIVED: 21 MARCH 1991
DATE ANALYZED: 22 MARCH 1991
REPORT DATE: 22 MARCH 1991

FIELD I.D.	LAB I.D.	FLASHPOINT	CORROSIVITY (pH)
AX032191-01	910321-09	TOP 92 F BOT 94 F	6.41
AX032191-02	910321-10	TOP 117 F BOT > 220 F	6.63
AX032191-03	910321-11	TOP 67 F BOT 92 F	7.29
AX032191-04	910321-12	> 220 F	6.25
AX032191-05	910321-13	TOP 19 F BOT 37 F	7.27
AX032191-06	910321-14	> 220 F	14.02

Note: A material of known flashpoint 140 F was analyzed as a quality control check, and found to have a measured flashpoint of 142 F.

Flashpoint analyses were conducted by Phase Separation Science, Inc., Baltimore, MD, according to EPA Method 1020 (OSW-846).

The pH meter apparatus was calibrated with buffer solutions at pH 4.0 and 10.0. A known pH 7.00 buffer was analyzed and produced a measured pH of 7.01.

TOP - Denotes analysis of top phase (layer).

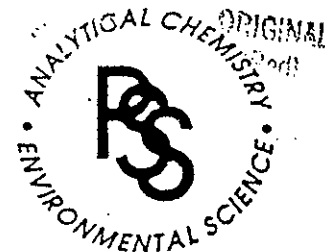
BOT - Denotes analysis of bottom phase (layer).

F - Degrees Fahrenheit

> - Greater Than Reported Value

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 A
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Waste Sample
Project Name: MDE
Analyze for Flash Point

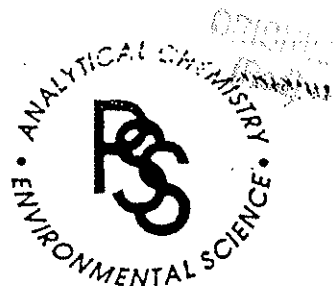
Sample ID	Flash Point
91-0321-09 Top Layer	92 F
91-0321-09 Bottom Layer	94 F

The above analysis was performed according to procedures described in the following method:
A: 1020 Flash Point, setaflash

Reviewed by: (b) (4)
Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 B
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Waste Sample
Project Name: MDE
Analyze for Flash Point

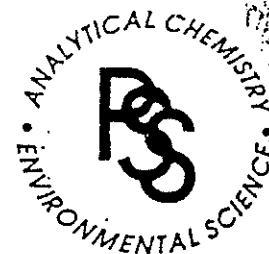
Sample ID	Flash Point
91-0321-10 Top Layer	117 F
91-0321-10 Bottom Layer	> 220 F

The above analysis was performed according to procedures described in the following method:
1020 Flash Point, setaflash

Reviewed by: (b) (4)
Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 C
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Waste Sample
Project Name: MDE
Analyze for Flash Point

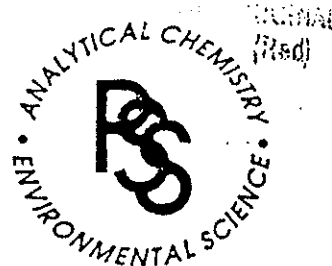
Sample ID	Flash Point
91-0321-11 Top Layer	67 F
91-0321-11 Bottom Layer	92 F

The above analysis was performed according to procedures described in the following method:
1020 Flash Point, setaflash

Reviewed by: (b) (4)
Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 D
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Waste Sample
Project Name: MDE
Analyze for Flash Point

Sample ID

Flash Point

91-0321-12

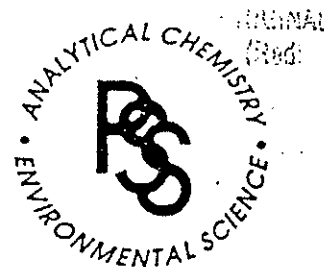
> 220 F

The above analysis was performed according to procedures described in the following method:
A: 1020 Flash Point, setaflash

Reviewed by: (b) (4)
Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 E
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Waste Sample
Project Name: MDE
Analyze for Flash Point

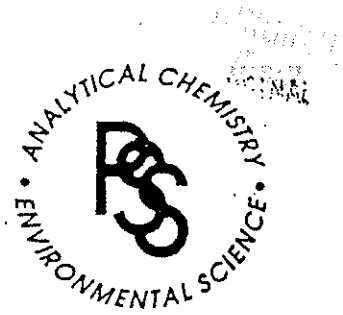
Sample ID	Flash Point
91-0321-13 Top Layer	19 F
91-0321-13 Bottom Layer	37 F

The above analysis was performed according to procedures described in the following method:
1020 Flash Point, setaflash

Reviewed by: (b) (4)
Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 F
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Soil Sample
Project Name: MDE
Analyze for Flash Point

Sample ID

Flash Point

91-0321-14

> 220 F

The above analysis was performed according to procedures described in the following method:
1020 Flash Point, setaflash

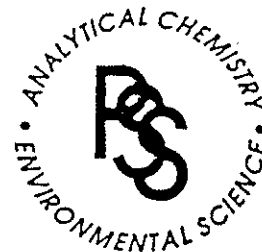
Reviewed by:

(b) (4)

Chemist

OFFICES:
6630 BALTIMORE NAT'L PIKE
SUITE 104-A
ROUTE 40 WEST
BALTIMORE, MD 21228
301-747-8770
800-932-9047

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS
No. 910322-02 G
Maryland Spectral Services, Inc.
March 22, 1991

Analysis of: Solvent 140
Analyze for Flash Point

Standard	Flash Point actual	Flash Point obtained
Solvent 140	140 F	142 F

above analysis was performed according to procedures described in the following method:

1020 Flash Point, setaflash

Reviewed by:

(b) (4)

Chemist

F. Graphic Representations

The attached site location map, sketch, and photodocumentation substantiate the site conditions described above (See attachments).

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

Section 300.415 (b) (2) of the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR 300, et seq., outlines the factors to be considered in determining the appropriateness of a Removal Action. Under Section 300.415 (b) (2), paragraphs (i), (iii), (iv), (v), (vi), and (vii) are directly applicable to the situation at the Drumco Drum Dump Site as follows:

300.415 (b) (2) (i) "Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants."

Access to the drum piles and surface soil contamination at the site is unrestricted, and there is evidence that unauthorized persons, including children, have been onsite. Direct contact, inhalation, and/or ingestion of the inorganic corrosives, organic flammable liquids, and contaminated soils pose a threat to persons entering the site. Offsite migration of the flammable organics and corrosive substances towards the public roadway, private businesses, and waterways also poses a direct contact threat to human health.

300.415 (b) (2) (iii) "Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release."

An estimated 400 drums that contain inorganic corrosives and organic flammable liquids are stored haphazardly at the site. The drums are corroded and many are leaking. Contact with stained soils and drum leakage points provide a direct route of exposure to the contaminants to persons entering the site.

300.415 (b) (2) (iv) "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate."

97001
(80)

Stained soil is evident throughout 5 acres of the site, indicating the potential for extensive soil contamination. Stained soil in at least one location has a pH of 13, meaning it is highly caustic. Direct human contact with the contaminated soils as well as offsite migration of soil contamination pose threats to the surrounding community and the environment.

300.415 (b) (2) (v) "Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released."

Deterioration of drum integrity, resulting in leakage, has already occurred from exposure to constant weathering and is expected to continue. In addition to the threat of additional release from the weathering of drums, run-off from local precipitation may cause the migration of contaminants already released.

300.415 (b) (2) (vi) "Threat of fire or explosion."

Drums known to contain flammable liquids are scattered throughout fiber drums and dried vegetation. Because of the poor condition of the drums, flammable vapors may be released in sufficient concentration to ignite a fire. Given the accessibility of the site, there is the potential for arson. Several businesses (e.g., the Hess Oil Storage Terminal and the Baltimore City Gas Plant) that store or utilize large quantities of flammable liquids or gases are in close proximity to the site. A fire at the site, if uncontrolled, could spread rapidly (the site is covered by vegetation) to these facilities. The outcome of such a scenario could be disastrous. Mitigation of such an incident would be well beyond local resources.

300.415 (b) (2) (vii). "The availability of other appropriate federal or state response mechanisms to respond to the release."

The Maryland Department of the Environment does not possess the resources to undertake the stabilization of this site at this time. MDE has requested U.S. EPA assistance.

IV. ENDANGERMENT DETERMINATION

Actual and additional threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in the Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. ENFORCEMENT

The EPA Removal Enforcement Section has been provided with all background information available to pursue any and all enforcement actions pertaining to the Drumco Drum Dump Site. (See attached Confidential Enforcement Memorandum).

VI. PROPOSED ACTIONS AND COSTS

The primary objective of the action proposed in this memorandum is the mitigation of the direct contact, fire and explosions, inhalation, and ingestion threats by removing and disposing of drums of hazardous substances from the site. The activities necessary to abate the threats caused by the drums are expected to require less than 12 months to complete.

A full investigation of the soil contamination will be conducted following the drum removal. The OSC will make additional recommendations when the extent of soil contamination has been determined. The OSC has included funds (in the contingency funds) to deal with a limited amount of soil contamination. The OSC has also included funds for disposal of empty drums should there prove to be insufficient space for onsite storage consistent with planned operations.

A. Proposed Action

The following Two-phased action is planned:

Phase 1.

- * Establish site security
- * Survey site and determine if room exists to stage empty drums elsewhere onsite. Otherwise, remove and transport empty drums to an authorized drum recycling facility in order to isolate drums containing materials which are known to be or may be hazardous
- * Sample all drums containing substances and overpack those drums that contain hazardous substances and are in poor condition
- * Segregate all drummed materials into the appropriate hazard classes in preparation for disposal
- * Analyze soils as needed to determine necessity for disposal
- * Temporarily demobilize while awaiting disposal if more time is needed for disposal characterization/approval.

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(Red)

ORIGINAL
Phase 2:

- * Determine the most cost-effective and environmentally beneficial disposal method for the characterized wastes (Utilize onsite treatment of corrosive materials if cost-effective)
- * Manifest and transport all remaining hazardous wastes to a RCRA-approved facility for disposal.
- * Demobilize from site.
- * Estimated costs

Extramural Costs

ERCS	\$ 1,274,340
20% Contingency	254,868
ERCS Subtotal	1,529,208
TAT	76,616
Extramural Subtotal	1,605,824
20% Contingency	321,165
Total Extramural	\$ 1,926,989

Intramural Costs

EPA Direct	28,700
EPA Indirect	37,800
Total Intramural	66,500
TOTAL PROJECT CEILING ESTIMATE	\$ 1,993,489

C. Contribution to Remedial Performance

The Drumco Drum Dump Site is not an NPL site; there are currently no plans for long-term remediation. The proposed removal activity is consistent with accepted removal practices and is expected to abate the threats associated with the drums that meet the NCP removal criteria.

D. Compliance with ARARS

The proposed Removal Action set forth in this memorandum will comply with applicable, relevant and appropriate environmental and health requirements, to the extent practicable, considering the exigencies of the situation.

ORIGINAL
(Reg)

VII. EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN
OR IF ACTION IS DELAYED.

If appropriate action is not taken or is delayed, the direct contact, fire and explosion, inhalation, and ingestion threats posed by the hazardous substances in the drums to persons using the area for recreation, and nearby businesses will continue. Further delay in appropriate actions will result in additional drum deterioration and a major release of flammable and corrosive materials offsite.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues pertaining to this site.

IX. RECOMMENDATION

Because the conditions at the site meet the removal criteria in the NCP Section 300.415 (b) (2), I recommend your approval of the proposed Removal Action. The estimated total project ceiling is \$1,993,489, of which \$1,926,989 is for extramural cleanup contractor costs. You may indicate your approval or disapproval by signing below. I recommend your approval to initiate response actions due to the nature of the threat described herein.

Approved: Ed B. Turner Date: 6/7/81

Disapproved: _____ Date: _____

Attachments: Enforcement Confidential Memorandum
Map and Site Sketch
Site Photographs

PROJECTION
Projection ID No.: DDD1

Date: 05/01/91

Cleanup Contractor: ENVIR. TECHNOLOGY

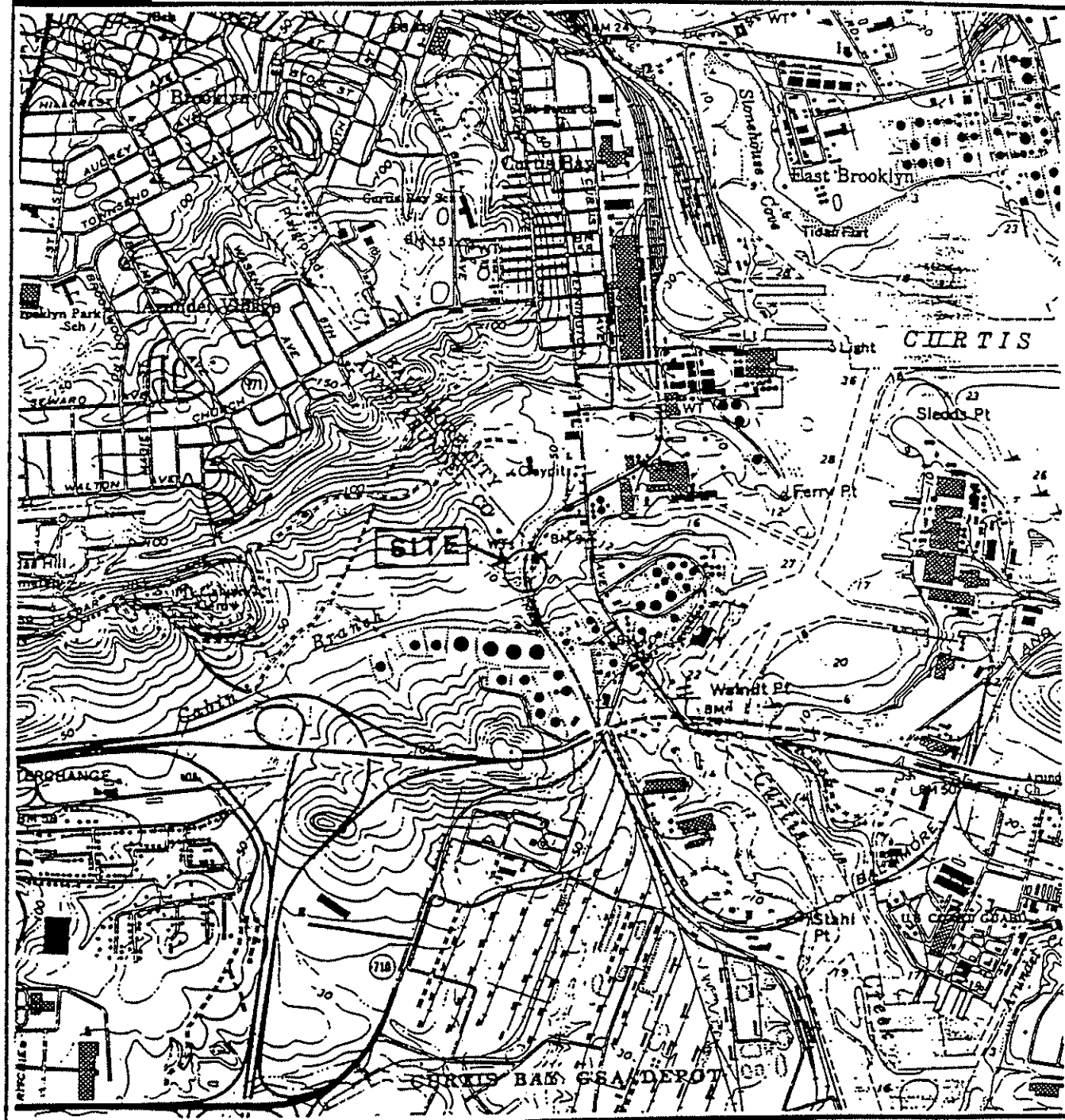
TAT Contractor: WESTON
=====Project Scope
=====

Number	Step/Milestone	Estimated Duration (Days)
1	SECURITY, MOB., EMPTY DRUMS	17
2	SAMPLE, OVERPACK, SEGREGATE DRS	30
3	SOIL SAMPLING	2
4	DEMOB., AWAIT DISPOSAL APPRS	20
5	TRANSPORT AND DISPOSAL	20
6	DEMOBILIZATION	1



WESTON · MPD

TDD Number: 9103-37A
PCS Number: 1491

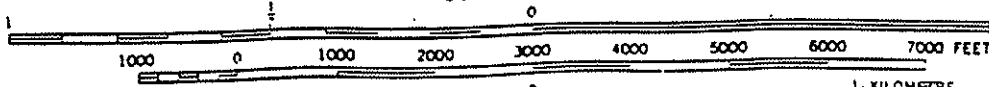


SITE LOCATION MAP

DRUMCO DRUM DUMP SITE
BALTIMORE, ANNE ARUNDEL COUNTY, MD

USGS 7.5 MINUTE, CURTIS BAY QUADRANGLE, MD

SCALE 1:24 000



QUADRANGLE LOCATION

GRID AND 1974 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

ORIGINAL
(Red)

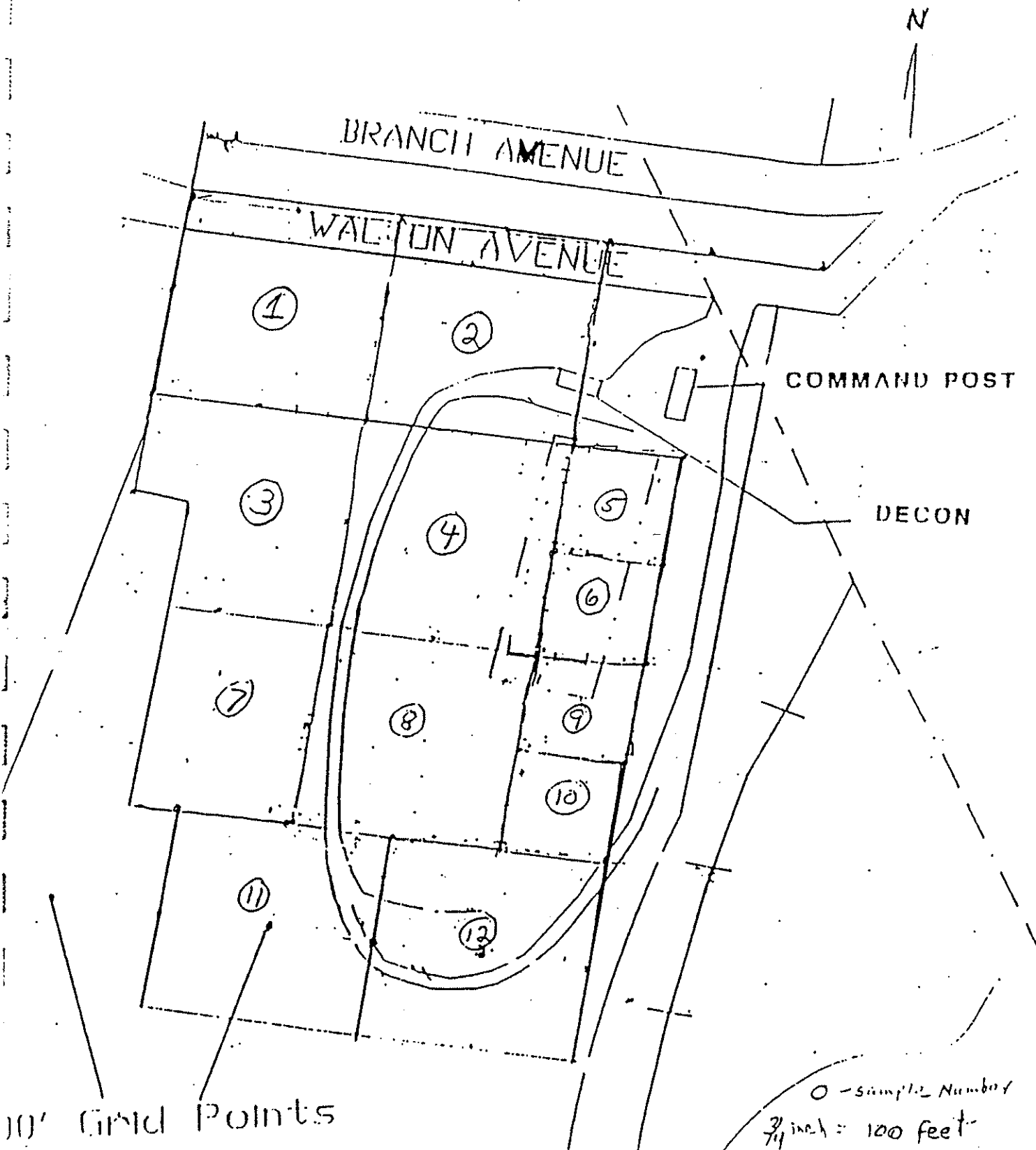
ORIGINAL
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APPENDIX I:
SOIL SAMPLES ANALYTICAL RESULTS

ORIGINAL
(Rec'd)
ORIGINAL
(Rec'd)

DRUMCO DRUM DUMP

SOIL SAMPLE LOCATION MAP



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(Red)

12 COMPOSITE SAMPLES

(ALL RESULTS, EXCEPT MOISTURE, ARE IN PARTS
PER MILLION (PPM). MOISTURE IS IN PERCENT (%))

PARAMETER	REGULAT. LIMIT	SAMPLE NUMBER					
		1	2	3	4	5	6
SILVER	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ARSENIC	5	<0.01	0.1	<0.01	<0.01	0.01	<0.01
BARIUM	100	0.43	0.91	1.07	0.45	1.09	0.84
CADMIUM	1	<0.003	<0.003	0.005	0.005	<0.01	0.19
CHROMIUM	5	<0.01	<0.01	0.106	<0.01	<0.01	<0.01
MERCURY	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
LEAD	5	0.09	<0.01	0.02	<0.01	<0.01	0.01
SELENIUM	1	0.02	0.2	0.2	0.05	0.02	0.02
CORROSIVITY	-	6	6	7	6	7	7
EXTRACTABLE ORGANIC HALIDE	-	<2	<2	<2	<2	<2	<2
MOISTURE	-	17.0	20.2	18.1	15.3	15.7	19.4
OIL AND GREASE	-	1600	1800	660	1100	5900	2100

PARAMETER	REGULAT. LIMIT	SAMPLE NUMBER					
		7	8	9	10	11	12
SILVER	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ARSENIC	5	<0.01	<0.01	0.01	0.01	0.01	<0.01
BARIUM	100	0.44	0.25	0.22	0.11	0.43	0.16
CADMIUM	1	0.012	0.021	0.097	0.025	<0.003	0.016
CHROMIUM	5	0.03	0.03	3.29	0.04	<0.01	0.02
MERCURY	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
LEAD	5	0.10	<0.01	0.02	<0.01	0.10	0.02
SELENIUM	1	0.03	0.02	0.02	0.03	0.02	0.04
CORROSIVITY	-	6	6	7	6	7	7
EXTRACTABLE ORGANIC HALIDE	-	860	<2	<2	<2	<2	<2
MOISTURE	-	19.5	35.3	27.9	21.7	21.2	14.5
OIL AND GREASE	-	1200	1000	780	1300	2000	2000

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(Red) ORIGIN
(Red)

ALL TWELVE (12) COMPOSITE SAMPLES INDICATED THE FOLLOWING:

<u>TEST PARAMETERS</u>	<u>RESULTS/LIMITS (ppm)</u>	<u>REGULATORY LIMIT (ppm)</u>
Cyanide	<1	250
Sulfide	<0.4	500
<u>ORGANIC SEMIVOLATILES</u>		
Hexachloroethane	<0.5	5
Nitrobenzene	<0.5	2
Pyridine	<0.5	5
Hexachlorobutadiene	<0.5	0.5
2,4-Dinitrotoluene	<0.13	0.13
Hexachlorobenzene	<0.13	0.13
O-cresol	<2.5	200
P-cresol	<2.5	200
M-cresol	<2.5	200
2,4,6-Trichlorophenol	<0.5	7
2,4,5-Trichlorophenol	<0.5	400
Pentachlorophenol	<2.5	100
<u>ORGANIC VOLATILES</u>		
Vinyl chloride	<0.05	0.2
1,1-Dichloroethylene	<0.2	0.7
Chloroform	<0.2	6
Carbon tetrachloride	<0.2	0.5
1,2-Dichloroethane	<0.2	0.5
Methylethylketone	<0.2	200
Benzene	<0.2	0.5
Trichloroethylene	<0.2	0.5
Tetrachloroethylene	<0.7	0.7
Chlorobenzene	<0.2	1000
1,4-Dichlorobenzene	<0.2	7.5

ORIGINAL
(Red)

310
(Red)

4. Surrogate Recovery Summary

2A
WATER VOLATILE SURROGATE RECOVERY

ORIGINAL
(Red)

Job Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO

Job Code: MSS Case No.: MDE032 SAS No.: SDG No.:

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	AX032191-05	100	98	94		0
02	VBLK0331B1	105	103	103		0

QC LIMITS

S1 (TOL) = Toluene-d8 (88-110)
 S2 (BFB) = Bromofluorobenzene (86-115)
 S3 (DCE) = 1,2-Dichloroethane-d4 (76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

1
(Red)

5. Method Blank Summary

ORIGINAL
(Red)
ORIGINAL
(Red)

4A
VOLATILE METHOD BLANK SUMMARY

Customer Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO
Code: MSS Case No.: MDE032 SAS No.: SDG No.:
File ID: 0331VBLKB1 Lab Sample ID: METHOD_BLANK
Date Analyzed: 03/31/91 Time Analyzed: 1337
Matrix: (soil/water) WATER Level: (low/med)
Instrument ID: MSB

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	AX032191-05	91032113	032113DD	1450

REMARKS: VBLK0331B1 VOA MEDIUM SOIL METHOD BLANK
35(5)/240/10, EM 1250V MSB

000000
000

6. GC/MS Tuning and Mass Calibration-Bromofluorobenzene (BFB)

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO

Lab Code: MSS Case No.: MDE032 SAS No.: SDG No.:

Lab File ID: 0328BFEBB1 BFB Injection Date: 03/28/91

Instrument ID: MSB BFB Injection Time: 2000

Matrix: (soil/water) SOIL Level: (low/med) MED Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.7
75	30.0 - 60.0% of mass 95	56.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
174	Less than 2.0% of mass 174	0.0 (0.0)1
175	Greater than 50.0% of mass 95	82.2
176	5.0 - 9.0% of mass 174	5.4 (6.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	79.2 (96.4)1
177	5.0 - 9.0% of mass 176	6.0 (7.6)2

1-Value is % mass 174

2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	50PPB VOA	0328V2B1	03/28/91	2042
02	VSTD200	200PPB VOA	0328V5B1	03/28/91	2147
03	VSTD150	150PPB VOA	0328V4B1	03/28/91	2242
04	VSTD100	100PPB VOA	0328V3B1	03/28/91	2335
05	VSTD020	20PPB VOA	0328V1B1	03/29/91	0029

ORIGINAL
(Red)

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO

Lab Code: MSS Case No.: MDE032 SAS No.: SDG No.:

File ID: 0331BEFB1 BFB Injection Date: 03/31/91

Instrument ID: MSB BFB Injection Time: 1122

Matrix: (soil/water) SOIL Level: (low/med) MED Column: (pack/cap) CAP

n/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.9
75	30.0 - 60.0% of mass 95	59.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.1
175	5.0 - 9.0% of mass 174	5.4 (6.8)1
176	Greater than 95.0%, but less than 101.0% of mass 174	77.2 (97.6)1
177	5.0 - 9.0% of mass 176	5.7 (7.4)2

1-Value is % mass 174

2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	50PPB VOA	0331V2B1	03/31/91	1243
02	VBLK0331B1	METHOD BLANK	0331VBLKB1	03/31/91	1337
03	AX032191-05	91032113	032113DD	03/31/91	1450

CONFIDENTIAL
11/10/84

7. Initial and Continuing Calibration Check Summary

VOLATILE ORGANICS INITIAL CALIBRATION DATA

ORIGINAL
Recd

Lab Name: MD. SPECTRAL SERVICES, INC. Contract:

Code: Case No.: SAS No.: SDG No.:

Instrument ID: MSB Calibration Date(s): 03/28/91 03/29/91

Matrix: (soil/water) SOIL Level: (low/med) MED Column: (pack/cap) CAP

In RRF for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = 0328V1B1 RRF50 = 0328V2B1
 RRF100 = 0328V3B1 RRF150 = 0328V4B1 RRF200 = 0328V5B1

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	RRF	% RSD
Chloromethane	0.390	0.859	0.434	0.865	0.908	0.691	37.1#
Bromomethane	1.398	1.317	1.215	1.216	1.356	1.300	6.4
Vinyl Chloride	1.183	1.133	1.262	1.134	1.232	1.189	4.9*
Chloroethane	0.568	0.574	0.447	0.623	0.521	0.547	12.1
Ethylene Chloride	1.057	1.041	1.071	1.064	0.988	1.044	3.2
Petone	0.215	0.194	0.229	0.215	0.197	0.210	6.9
Carbon Disulfide	2.245	2.111	2.427	2.442	2.361	2.317	6.0
1,1-Dichloroethene	1.061	0.860	1.016	0.910	0.928	0.955	8.6*
1,1-Dichloroethane	1.882	1.749	2.005	2.019	1.945	1.920	5.7#
1,2-Dichloroethene (total)	1.212	1.253	1.309	1.288	1.261	1.265	2.9
Bromoform	3.358	3.119	3.539	3.485	3.335	3.367	4.8*
1,2-Dichloroethane	2.743	2.480	3.026	2.975	2.824	2.810	7.7
Butanone	0.059	0.062	0.080	0.075	0.074	0.070	12.9
1,1,1-Trichloroethane	1.094	0.986	1.142	1.124	1.073	1.084	5.6
Carbon Tetrachloride	1.345	1.262	1.376	1.348	1.326	1.331	3.2
Vinyl Acetate	0.137	0.098	0.168	0.200	0.239	0.168	32.5
1,1-Dichloroethane	1.096	1.044	1.183	1.160	1.115	1.120	4.9
1,2-Dichloropropane	0.303	0.290	0.324	0.317	0.310	0.309	4.2*
1,3-Dichloropropane	0.568	0.545	0.634	0.626	0.611	0.597	6.5
1,1,2-Trichloroethane	0.623	0.608	0.629	0.616	0.583	0.612	2.9
Bromochloromethane	1.248	1.195	1.312	1.277	1.232	1.253	3.5
1,1,2-Trichloroethane	0.425	0.411	0.449	0.432	0.423	0.428	3.3
Benzene	0.753	0.737	0.780	0.767	0.749	0.757	2.7
1,3-Dichloropropane	0.511	0.481	0.574	0.568	0.550	0.537	7.4
Bromoform	1.113	1.047	1.141	1.056	1.017	1.075	4.7#
2-Pentanone	0.272	0.347	0.380	0.393	0.382	0.355	13.9
Hexanone	0.163	0.152	0.180	0.178	0.174	0.169	6.9
1,1,2,2-Tetrachloroethane	0.626	0.569	0.615	0.595	0.591	0.599	3.7
1,1,2,2-Tetrachloroethane	0.541	0.511	0.512	0.464	0.485	0.503	5.8#
Toluene	0.521	0.531	0.537	0.532	0.526	0.529	1.2*
Chlorobenzene	0.929	0.894	0.877	0.825	0.816	0.868	5.5#
Ethylbenzene	0.376	0.358	0.352	0.342	0.328	0.351	5.1*
Styrene	0.817	0.807	0.814	0.784	0.782	0.801	2.1
1,2,4-Trichlorobenzene (total)	0.441	0.431	0.435	0.416	0.412	0.427	2.9
1,1-Dichloroethane	2.135	1.962	2.232	2.196	2.079	2.121	5.0
Isopropyl Ether	1.818	1.684	1.990	1.969	1.869	1.866	6.6
1,2,3-Trichlorobenzene	1.643	1.386	1.635	1.500	1.396	1.512	8.2
1,2,3-Trichlorobenzene	0.845	0.871	0.819	0.803	0.775	0.823	4.5
1,2,3-Trichlorobenzene	1.161	0.985	1.165	1.126	1.090	1.105	6.7
1,2,3-Trichlorobenzene	1.909	1.930	1.956	1.912	1.758	1.893	4.1

7A
VOLATILE CONTINUING CALIBRATION CHECK

ORIGINAL

Lab Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO

Lab Code: MSS Case No.: MDE032 SAS No.: SDG No.:

Instrument ID: MSB Calibration date: 03/31/91 Time: 1243

Lab File ID: 0331V2B1 Init. Calib. Date(s): 03/28/91 03/29/91

Matrix: (soil/water) SOIL Level: (low/med) MED Column: (pack/cap) CAP

RRF50 for SPCC(%) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Chloromethane	0.691	1.114	-61.2
Bromomethane	1.300	1.330	-2.3
Vinyl Chloride	1.189	1.249	-5.0
Chloroethane	0.547	0.582	-6.4
Methylene Chloride	1.044	0.961	8.0
Acetone	0.210	0.193	8.1
Carbon Disulfide	2.317	2.269	2.1
1,1-Dichloroethene	0.955	0.885	7.3
1,1-Dichloroethane	1.920	1.836	4.4
1,2-Dichloroethene (total)	1.265	1.158	8.5
Chloroform	3.367	3.385	-0.5
1,2-Dichloroethane	2.810	2.745	2.3
2-Butanone	0.070	0.056	20.0
1,1,1-Trichloroethane	1.084	1.069	1.4
Carbon Tetrachloride	1.331	1.181	11.3
Vinyl Acetate	0.168	0.173	-3.0
Bromodichloromethane	1.120	1.098	2.0
1,2-Dichloropropane	0.309	0.278	10.0
cis-1,3-Dichloropropene	0.597	0.561	6.0
Trichloroethene	0.612	0.556	9.2
Dibromochloromethane	1.253	1.021	18.5
1,1,2-Trichloroethane	0.428	0.387	9.6
Benzene	0.757	0.674	11.0
trans-1,3-Dichloropropene	0.537	0.530	1.3
Bromoform	1.075	0.847	21.2
4-Methyl-2-Pentanone	0.355	0.378	-6.5
2-Hexanone	0.169	0.159	5.9
Tetrachloroethene	0.599	0.591	1.3
1,1,2,2-Tetrachloroethane	0.503	0.511	-1.6
Toluene	0.529	0.550	-4.0
Chlorobenzene	0.868	0.924	-6.5
Ethylbenzene	0.351	0.365	-4.0
Styrene	0.801	0.845	-5.5
Xylene (total)	0.427	0.436	-2.1
Methyl-t-Butyl Ether	2.121	2.200	-3.7
Isopropyl Ether	1.866	2.008	-7.6
Naphthalene	1.512	1.379	8.8
Toluene-d8	0.823	0.911	-10.7
Bromofluorobenzene	1.105	1.114	-0.8
1,2-Dichloroethane-d4	1.893	2.147	-13.4

ORIGINAL
Recd.

8. Internal Standard Area Summary

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

ORIGINAL
RECEIVED
DEC 1991

Lab Name: MD. SPECTRAL SERVICES, INC. Contract: DRUMCO

Lab Code: MSS Case No.: MDE032 SAS No.: SDG No.:

Lab File ID (Standard): 0331V2B1 Date Analyzed: 03/31/91

Instrument ID: MSB Time Analyzed: 1243

Matrix: (soil/water) SOIL Level: (low/med) MED Column: (pack/cap) CAP

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
=====	=====	=====	=====	=====	=====	=====
12 HOUR STD	26200	15.45	91000	16.99	74400	22.42
=====	=====	=====	=====	=====	=====	=====
UPPER LIMIT	52400		182000		148800	
=====	=====	=====	=====	=====	=====	=====
LOWER LIMIT	13100		45500		37200	
=====	=====	=====	=====	=====	=====	=====
EPA SAMPLE NO.						
=====	=====	=====	=====	=====	=====	=====
01 AX032191-05	28500	15.37	94600	16.90	81600	22.34
02 VBLK0331B1	26000	15.40	85600	16.95	75700	22.39

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an asterisk

ORIGINAL

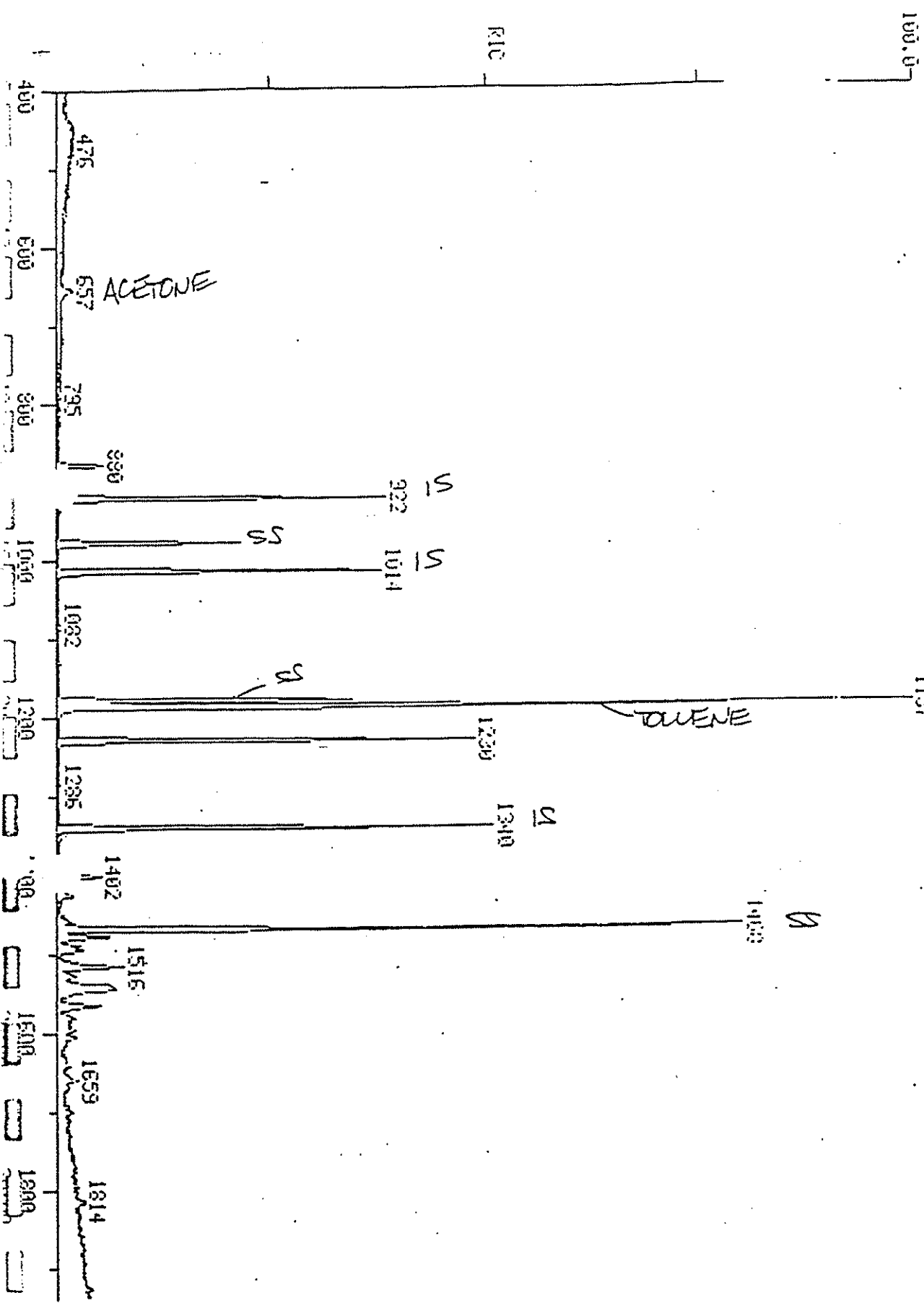
ORIGINAL
(Rec)

9. Chromatograms of Samples and Method Blanks

ORIGINAL

RIC
03/31/91 14:56:00
SAMPLE: R2032191-05 DRUMCO PENMINGTON AVE., 0.0152670ML, 5.0UL
CONDS.: 35(5)/240/10, EH 12500 MSB
KRIEGER: G 1,1940 LRIEL: H 0, 4.0 QUAD: H 0, 1.0 J 0 INSE: 0.20, 3

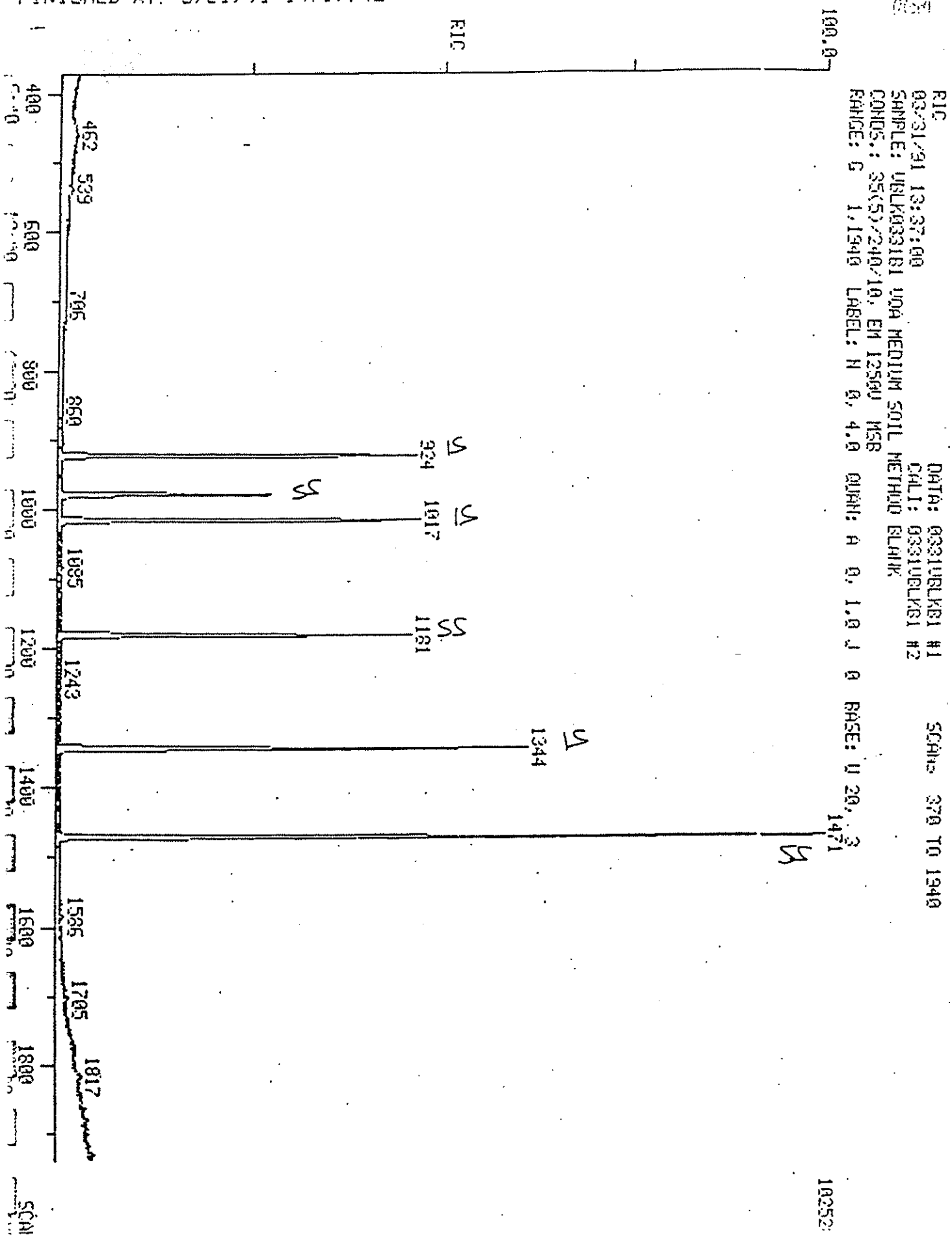
DATA: 03211300 11
CALL: 03211300 12
SCANS 400 TO 1340



135950

TCA FINISHED, 6 FOUND
FINISHED AT: 3/31/91 14:17:42

ORIGINAL
(Rev)



ORIGINAL
FROM
ORIGINAL
(Rev)

APPENDIX H:
REMOVAL ACTION ORDER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

ORIGINAL
(Red)

JUN 07 1991

SUBJECT: Approval of a Removal Action at the
Drumco Drum Dump Site, Baltimore City and
Anne Arundel County, Maryland

FROM: Edwin B. Erickson *E. B. Erickson*
Regional Administrator (3RA00)

TO: Donald R. Clay, Assistant Administrator
Office of Emergency and Remedial Response (OS-100)

THRU: Timothy Fields, Acting Director
Office of Emergency and Remedial Response (OS-200)

ATTN: Stephen D. Luftig, Director
Emergency Response Division (OS-210)

I. ISSUE

The attached CERCLA Funding Request pertains to the Drumco Drum Dump Site located in Baltimore City and Anne Arundel County, Maryland. An assessment performed by my staff at the site, in accordance with the National Contingency Plan (NCP), 40 CFR Part 300, has identified a direct contact threat to humans, a fire hazard, and potential threat for additional releases of hazardous substances from drums at the site. Funds have been requested in the amount of \$1,993,489, of which \$1,926,989 is for extramural cleanup contractor costs, to abate this threat.

Pursuant to the Delegation of Authority 14-1-A (9/13/87), and Section 104 (c) of the Superfund Amendments and Reauthorization Act (SARA) of the 1986, I have approved this request for funds for this site because it meets criteria set forth in the NCP 40 CFR, Section 300.415.

Attachment: Initial Funding Request



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

ORIGINAL
(Recd)

JUN 07 1991

SUBJECT: Request for Approval on Removal Action at
the Drumco Drum Dump Site, Baltimore City
and Anne Arundel County, Maryland

FROM: Walter F. Lee, On-Scene Coordinator
Eastern Response Section (3HW31)

TO: Edwin B. Erickson
Regional Administrator (3RA00)

THRU: Abraham Ferdas, Director
Office of Superfund (3HW02)

I. ISSUE

An assessment performed at the Drumco Drum Dump Site in Baltimore City and Anne Arundel County, Maryland, in accordance with the National Contingency Plan (NCP), 40 CFR Part 300, has identified a direct contact threat to humans, a fire hazard, and potential threat for additional releases of hazardous substances from drums at the site. The OSC has determined that this site meets the criteria for initiating a Removal Action under Section 300.415 of the NCP.

II. BACKGROUND

A. Site Description

The Drumco Drum Dump Site is a drum storage yard owned by Drumco, Inc., a drum recycler. The site consists of numerous drum piles that together cover approximately 5 acres of the 14-acre tract. The site is situated on the western city limit of Baltimore, and extends into adjacent Anne Arundel County. Vehicle access to the site is by way of Aspen Street in Baltimore. The majority of the drum dump is located in Anne Arundel County, and is adjacent to Pennington Avenue. The surrounding area is primarily industrial. Two waterways, Cabin Branch and Curtis Bay, are located downgradient and within 1/4 mile of the site. According to the Maryland Department of the Environment (MDE), the site is situated on illegally backfilled wetlands. The Baltimore City Gas Plant is located approximately 400 feet to the north of the site. A Hess Oil Terminal is located southwest of the site, approximately 100 yards downgradient. A rendering plant is located approximately 200 feet south and downgradient from the site. Other businesses are located approximately east 100 yards across Pennington Avenue and downgradient from the site.

Access to the site is virtually unimpeded. Although approximately half of the drums are located within a partially fenced portion of the storage yard, the fence is in poor condition. The remainder of the site, where the rest of the drums are scattered, is completely unfenced. Motorcycle paths and children's toys were observed by EPA investigators at the storage yard, indicating that public access to the site is occurring. Both legal property boundaries and the principal site boundaries are indefinite at the present time. The OSC proposes to determine these boundaries in the initial phase of the removal by surveying, soil sampling, and visual observations.

Several hundred drums containing hazardous materials are alleged to be stored onsite. These drums are scattered among approximately 13,000 empty drums on the site and are subject to constant weathering. The drums are stored haphazardly and stacked up to five drums high in places. Some are completely inverted and others are crushed beneath the weight of the piles. Some drums have gaping holes. Any movement of these drums by untrained personnel could cause harm or serious injury.

Stained soil is evident throughout the site. One location next to a leaking drum was sampled and found to have a pH of 13, indicating that the soil is corrosive. Sampling of the few accessible drums containing alleged hazardous materials revealed flammable and/or corrosive materials in 83% of the drums sampled. Due to the haphazard arrangement of the drums, further sampling was not possible without major effort and expense. However, since the site served as a storage yard for a recycling facility, as distinct possibility exists for other hazardous materials, such as poisons, oxidizers, or other reactive materials, to be present. These types of materials are not as easily recognizable by methods such as air monitoring used for preliminary assessments.

B. Incident Release Characteristics

After receiving several complaints of hazardous materials stored on the site, MDE inspected the Drumco facility on September 26, 1990. According to MDE, a trailer containing leaking caustic materials was found onsite. MDE also noted evidence of soil contamination caused by drum spillage in the storage yard. State contingency funds were used to remove the caustic drums from the trailer, and the owner of the facility, Mr. George Phillip Garret, III, was advised to clean up the storage yard.

On January 12, 1991, an MDE inspection of the facility revealed that site conditions had deteriorated. Drums were stored haphazardly throughout the yard and obvious spillage of drum materials was evident. MDE issued a formal complaint and order to Drumco, Inc., on January 21, 1991, for violations of Maryland water control and solid waste management laws.

In March of 1991, an employee witness reported that there were approximately 200 hazardous waste drums hidden in the storage yard. MDE found a number of drums suspected of containing hazardous waste. These drums yielded the results mentioned above. The potential probably exists for additional waste drums to be hidden under drum piles in the rest of the facility.

C. Quantities and Types of Substances Present

During the March 1991 assessment by the MDE, samples were collected from six drums that could be accessed in three separate drum piles onsite. Four of the drums were determined to be multilayered flammable liquids (i.e., flash points of less than 140 degrees F). One drum was determined to be corrosive (i.e., a pH greater than 12.5). The remaining drum did not indicate the characteristics of flammability or corrosivity.

During the April 1, 1991, removal assessment by the EPA Region III Superfund Removal Branch, drums labeled as flammable liquids, corrosives, methylene chloride, trichloroethane, and acetone were found scattered throughout approximately 13,000 empty drums. In addition to being flammable and corrosive, these materials also pose acute and chronic health hazards. Based on witness reports and site investigation data, it is believed that as many as 400 drums possibly containing these and other hazardous wastes are onsite. Visibly stained soils were observed around the drum piles, indicating the potential for extensive soil contamination onsite from drum leakage and spillage.

All of the above-mentioned substances, if present, would be considered hazardous pursuant to Section 101 (14) of CERCLA.

D. NPL Status

The Drumco Drum Dump Site is not on the National Priorities List (NPL), nor is it currently proposed for the list. The site has been referred to the EPA Region III Site Investigation Section. A Preliminary Assessment has not yet been performed, but is expected in the future.

E. State and Local Authorities' Roles

The Maryland Department of the Environment provided significant background information collected during investigations conducted from September of 1990 through March of 1991. The OSC continues to coordinate site activities with State and local officials.

Karver,
FYI - looks like a go!
- near
Snow Hill

Drumco:

Background

Drumco operated a drum recycling business at 1427 Bank Street in Baltimore. Empty containers collected by the company were stored at a storage yard off Pennington Ave. The site straddles the Baltimore City/Anne Arundel County line with the majority of the site being in Anne Arundel Co.

Regulatory History

The Company was fined \$7000.00 for RCRA and water pollution violations in March of 1989. Additionally, in September 1990, approximately 40 drums of RCRA waste were discovered hidden a trailer at the site. This incident was referred to the Environmental Crime Unit and the owner has been indicted for the transportation and storage of this material. The Hazardous Waste Enforcement Division issued another Administrative Order on January 1991 to force the company to clean up the storage yard which had a serious solid waste problem and presented a potential water pollution hazard. The Company did not appeal the order which is now final; no action has been taken by the company to correct the problems cited in the order and the company is believed to be close to bankruptcy.

On March 12, 1991 additional drums of suspected waste were discovered hidden under some of the stored stacks of empty drums. Six samples collected on March 21 1991 were analyzed and four of the six were found to be hazardous for ignitability and one was corrosive. the Enforcement Division has determined that there is in excess of 100 drums of waste clearly visible in the storage area. There may be at least 100 hidden under the other stacks of drums stored at the site.

Total # of drums 10,000 - 20,000 depending on how many empties walk off site. OSC Rec
during assessment 4-1-91

ORIGINAL
(Red)

98L
6/10/91

cc P. Garratt III;

Brother David G. Garratt

P.O. Box 1198

Sykesville, MD 21784 (301) 442-1614

- David R. Garratt.

May have been an uncle is deceased. No info on heirs.

According to David G. Garratt ~~he~~ he's a deceased great uncle. No info on heirs.

Paul Rosenberg

5625 Allentown Rd.

Suite 101

Camp Springs, MD 20746

His suit file D-10; '89 Tax Sale.

Office (301) 442-1614

Home (301) 249-6150

He represents Theodore Schere, who purchased the tax sale certificate to the property. He has since dropped it due to the liability issues. He had filed a suit which included;

Emma Zuttermeister

13400 Forsythe Rd.

Sykesville, MD 21784

Also named the following people. They have no add'l info on them:

Gayne, Walmsley, Schaumburg, Hinton, Richard Williams, +

Robt. Williams

There are no Zuttermeisters listed in Sykesville or Baltimore.

Drumco RCRA

1988 Insp by MD

Admin

\$14k penalty

Returned to compliance 1989 + haven't been inspected since
then.

This info is for Larry Palkin 5/15/91

JPL

REGION III INCIDENT NOTIFICATION REPORT

1. Case No.: MD 91 17

2. Reported: (mm/dd/yy) 03/26/91		3. Time: 1300		Recorded By: W. Lee	
4. <input type="checkbox"/> Through NRC: No		5. NRC Case No.: N/A			
A. REPORTER	6. Reported By: Frank Henderson				
	7. Organization Name: Maryland Dept. of Environment				
	8. Organization: <input type="checkbox"/> 9. discharger <input type="checkbox"/> 10. public <input checked="" type="checkbox"/> 11. state <input type="checkbox"/> 12. local <input type="checkbox"/> 13. federal				
	14. Address:				
	15. City:		16. County:		17. State: MD
18. Zip:		19. Phone: ()			
B. DISCHARGER	20. <input type="checkbox"/> As Above in A if 9 applies		21. Name: DRUMCO		
	22. Address: 1427 BANK STREET				
	23. City: Baltimore		24. County: Anne Arundel		25. State: MD
	26. Zip:		27. Phone: () N/A		
C. INCIDENT LOCATION	28. <input checked="" type="checkbox"/> As Above in B		29. Street or Approx. Location: STORAGE YARD OFF PENNINGTON AVE.		
	30. City:		31. County:		32. State:
	33. Spill Date: (mm/dd/yy) No spill / notification only				
D. DATE	34. Spill Time:				
	Material: <input type="checkbox"/> or <input type="checkbox"/> other hazardous substance		35. Material: <input checked="" type="checkbox"/> Unknown		UN/ DOT No.
	36. Suspected Waste		37.	38.	CAS No.
	39. haz		40.	41.	CHRIS Code
E. MATERIAL	42.		43.	44.	Quantity Spilled
	45.		46.	47.	Units (Circle 1)
	48.		49.	50.	41. bbl. oil
	51.		52.	53.	42. g. oil
F. SOURCE	Source of Spill: <input type="checkbox"/> 54. highway <input type="checkbox"/> 55. air transport <input type="checkbox"/> 56. railway <input type="checkbox"/> 57. vessel <input checked="" type="checkbox"/> 58. fixed facility <input type="checkbox"/> 59. pipeline <input type="checkbox"/> 60. offshore U.S.T. <input type="checkbox"/> unknown		61. Vehicle ID or Carrier No.:		
	62. Description: approx 200 drums of haz waste				
	63. Medium Affected: <input type="checkbox"/> 63. air <input checked="" type="checkbox"/> 64. land <input type="checkbox"/> 65. water <input type="checkbox"/> 66. groundwater <input type="checkbox"/> 67. within facility only none				
G. MED.	68. Waterway Affected: none				
	Reported Cause: <input type="checkbox"/> 69. transportation accident <input type="checkbox"/> 70. equipment failure <input checked="" type="checkbox"/> 71. operational error <input type="checkbox"/> 72. natural phenomenon <input type="checkbox"/> 73. dumping <input type="checkbox"/> 74. unknown <input checked="" type="checkbox"/> 75. other				
	76. Description: improper storage/disposal				
H. CAU.	77. no. of injuries				
	78. no. of deaths				
I. DAMAGES	79. property damage > \$50,000				
	80. <input type="checkbox"/> Evacuation				
J. ACT. IONS	81. Response Action Taken: Notify O/S; previous violation request for removal assessment.				
	82. Caller Has Notified: <input type="checkbox"/> 82. state/local <input type="checkbox"/> 83. discharger <input type="checkbox"/> 84. USCG <input type="checkbox"/> 85. other <input type="checkbox"/> 86. unknown				
K. NOTIFIED	Agency Name				
	87. Comments: MDE requested CWA assistance for drum site containing about 200 drums of haz waste (formaldehyde, corrosive) is about 13000 drums				
L. COMMENTS	Additional Information				
	Responsibility: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> USCG <input type="checkbox"/> Non-duty hours <input type="checkbox"/> CWA 308 Spill letter				
	Response by: <input type="checkbox"/> responsible party <input checked="" type="checkbox"/> State <input type="checkbox"/> local <input checked="" type="checkbox"/> OSC/EPA <input type="checkbox"/> other <input type="checkbox"/> USCG				
	Agency Name: MD State				
M. REGIONAL DATA FIELDS	If OSC: Name Lee <input type="checkbox"/> 311 Activation - PIC # <input type="checkbox"/> CERCLA Activation				
	EPA NOTIFICATION: Name, date, & time; OSC notified: W. Lee				
	USCG: State/local: WFO: EPA: 34W33 branch Referral:				

To: ERD/OERR (EPA5511)
To: G.CRYSTALL (EPA93028)
To: REGION03.TAT (EPA9322)
To: RRC (EPA9374)
From: REGION03.TAT (EPA9322) Delivered: Fri 12-Apr-91 14:50 EDT
Subject: DRUMCO DRUM DUMP POLREP #01 (ASSESSMENT)
Mail Id: IFM-163-910412-133561110

POLREP #01

DRUMCO DRUM DUMP (ASSESSMENT)

BALTIMORE CITY AND ANNE ARUNDEL COUNTY, MD

ATTN: GREGG CRYSTALL AND STEPHEN LUFTIG

I. SITUATION (1500 HOURS, APRIL 1, 1991)

A. BACKGROUND: DRUMCO DRUM DUMP SITE IS A DRUM STORAGE YARD OWNED BY DRUMCO, INC., A DRUM RECYCLER. IN SEPTEMBER OF 1990 THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) RECEIVED COMPLAINTS REGARDING THE STORAGE OF HAZARDOUS MATERIALS ON SITE. MDE REMOVED LEAKING CAUSTIC DRUMS FOUND IN A TRAILER ON SITE. MDE ALSO NOTIFIED THE OWNER OF THE FACILITY, MR. P. GARRET, OF THE NEED TO ADDRESS THE CLEANUP OF THE YARD AREA. ON MARCH 12, 1991 AN MDE INVESTIGATION REVEALED THAT SITE CONDITIONS HAD DETERIORATED. DRUMS OF CORROSIVE AND FLAMMABLE LIQUIDS WERE FOUND HIDDEN UNDER PILES OF EMPTY DRUMS THROUGHOUT THE SITE. MDE REQUESTED EPA ASSISTANCE ON MARCH 19, 1991.

B. PERSONNEL ON SITE: EPA-2, TAT-2.

C. WEATHER: CLOUDY, TEMPS IN THE MID 60'S.

II. ACTIONS TAKEN

A. OSCS LEE AND OWENS, AND TAT MET AT THE MDE OFFICES IN BALTIMORE, MD. MDE REPRESENTATIVES FRANK HENDERSON, DAVID HEALY, AND ART O'CONNELL SUPPLIED BACKGROUND INFORMATION ON THE DRUM DUMP. ACCORDING TO THE MDE 200 DRUMS CONTAINING HAZARDOUS MATERIALS ARE SCATTERED AMONGST THOUSANDS ON EMPTY DRUMS AT THE STORAGE YARD.

B. OSCS LEE AND OWENS, AND TAT PERFORMED AN INITIAL SITE ASSESSMENT. AN ESTIMATED 13,000 DRUMS WERE FOUND TO BE IN POOR CONDITION, STORED HAPHAZARDLY, AND SUBJECT TO CONSTANT WEATHERING. GROSS DRUM LEAKAGE WAS EVIDENT THROUGHOUT THE SITE. ALTHOUGH THE SURROUNDING AREA IS PRIMARILY INDUSTRIAL, THERE WAS AMPLE EVIDENCE OF PUBLIC ACCESS (INCLUDING CHILDREN) ON THE 14 ACRE SITE. TWO WATERWAYS ARE ALSO LOCATED WITHIN 1/4 MILE OF THE DRUM STORAGE YARD. ACCORDING TO THE MDE, THE SITE ITSELF IS PART OF AN ILLEGALLY BACKFILLED, TIDAL WETLAND.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

ORIGINAL
OFFICIAL
(Roi)

SUBJECT: Drumco Drum Dump Site - MD-408

FROM: <Gregg Crystall, Chief
Eastern Response Section

TO: Ben Mykijewycz, Chief
Site Assessment Section

DATE: 1-30-92

Please be advised the Emergency Removal Action at the Drumco Dump Site will be completed by July, 1992. Remedial Action can be taken after this date.

If you have any questions regarding this site, please call George English at x 8250

Drumco Drum
Dump
MD-408

ORIGINAL
(Red)

APPENDIX B

Drumco Drum Dump Site
Federal On-Scene Coordinator's Report
Page 34

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(Rev.)

TABLE 5 - COMPOSITE SOIL SAMPLES (AREAS 1 - 5)							
(All results, except moisture, are in parts per million - moisture is in percent [%])							
PARAMETER	RCRA REGULATED LIMIT	SAMPLE LOCATION					
		1	2	3	4	5	6
SILVER	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ARSENIC	5	<0.01	0.1	<0.01	<0.01	0.01	<0.01
BARIUM	100	0.43	0.91	1.07	0.45	1.09	0.84
CADMIUM	1	<.003	<.003	0.005	0.005	<0.01	0.19
CHROMIUM	5	<0.01	<0.01	0.106	<0.01	<0.01	<0.01
MERCURY	0.2	<.002	<.002	<.002	<.002	<.002	<.002
LEAD	5	0.09	<0.01	0.02	<0.01	<0.01	0.01
SELENIUM	1	0.02	0.2	0.2	0.05	0.02	0.02
CORROSIVITY	-	6	6	7	6	7	7
EXTRACTABLE ORGANIC HALIDE	-	<2	<2	<2	<2	<2	<2
MOISTURE	-	17.0	20.2	18.1	15.3	15.7	19.4
OIL AND GREASE	-	1600	1800	660	1100	5900	2100

TABLE 5.1 - COMPOSITE SOIL SAMPLES (AREAS 7- 12)							
(All results, except moisture, are in parts per million - moisture is in percent [%])							
PARAMETER	RCRA REGULATED LIMIT	SAMPLE LOCATION					
		7	8	9	10	11	12
SILVER	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ARSENIC	5	<0.01	<0.01	0.01	0.01	0.01	<0.01
BARIUM	100	0.44	0.25	0.22	0.11	0.43	0.16
CADMIUM	1	0.012	0.021	0.097	0.025	<.003	0.016
CHROMIUM	5	0.03	0.03	3.29	0.04	<0.01	0.02
MERCURY	0.2	<.002	<.002	<.002	<.002	<.002	<.002
LEAD	5	0.10	<0.01	0.002	<0.01	0.10	0.02
SELENIUM	1	0.03	0.02	0.02	0.03	0.02	0.04
CORROSIVITY	-	6	6	7	6	7	7
EXTRACTABLE ORGANIC HALIDE	-	850	<2	<2	<2	<2	<2
MOISTURE	-	19.5	35.3	27.9	21.7	21.2	14.5
OIL AND GREASE	-	1200	1000	780	1300	2000	2000

See Figure 1 - Soil Sample Location Map

All twelve (12) composite soil samples indicated the following:

TABLE 6 - COMPOSITE SOIL SAMPLES (12)		
Test Parameters	Results (ppm)	RCRA Regulatory Limit (ppm)
Cyanide	<1	250
Sulfide	<0.4	500
Organic Semivolatiles		
Hexachloroethane	<0.5	3
Nitrobenzene	<0.5	2
Pyridine	<0.5	5
Hexachlorobutadiene	<0.5	0.5
2,4-Dinitrotoluene	<0.13	0.13
Hexachlorobenzene	<0.13	0.13
O-cresol	<2.5	200
P-cresol	<2.5	200
M-cresol	<2.5	200
2,4,6-Trichlorophenol	<0.5	2
2,4,5-Trichlorophenol	<0.5	400
Pentachlorophenol	<2.5	100
Organic Volatiles		
Vinyl chloride	<0.05	0.2
1,1-Dichlorethylene	<0.2	0.7
Chloroform	<0.2	6
Carbon tetrachloride	<0.2	0.5
1,2-Dichloroethane	<0.2	0.5
Methylethylketone	<0.2	200
Benzene	<0.2	0.5
Trichlorethylene	<0.2	0.5
Tetrchloroethylene	<0.2	0.7
Chlorobenzene	<0.2	1000
1,4-Dichlorobenzene	<0.2	7.5

ORIGINAL
(Ref)

ORIGINAL
(Ref)

Drumco Drum Dump Site
Federal On-Scene Coordinator's Report
Page 36

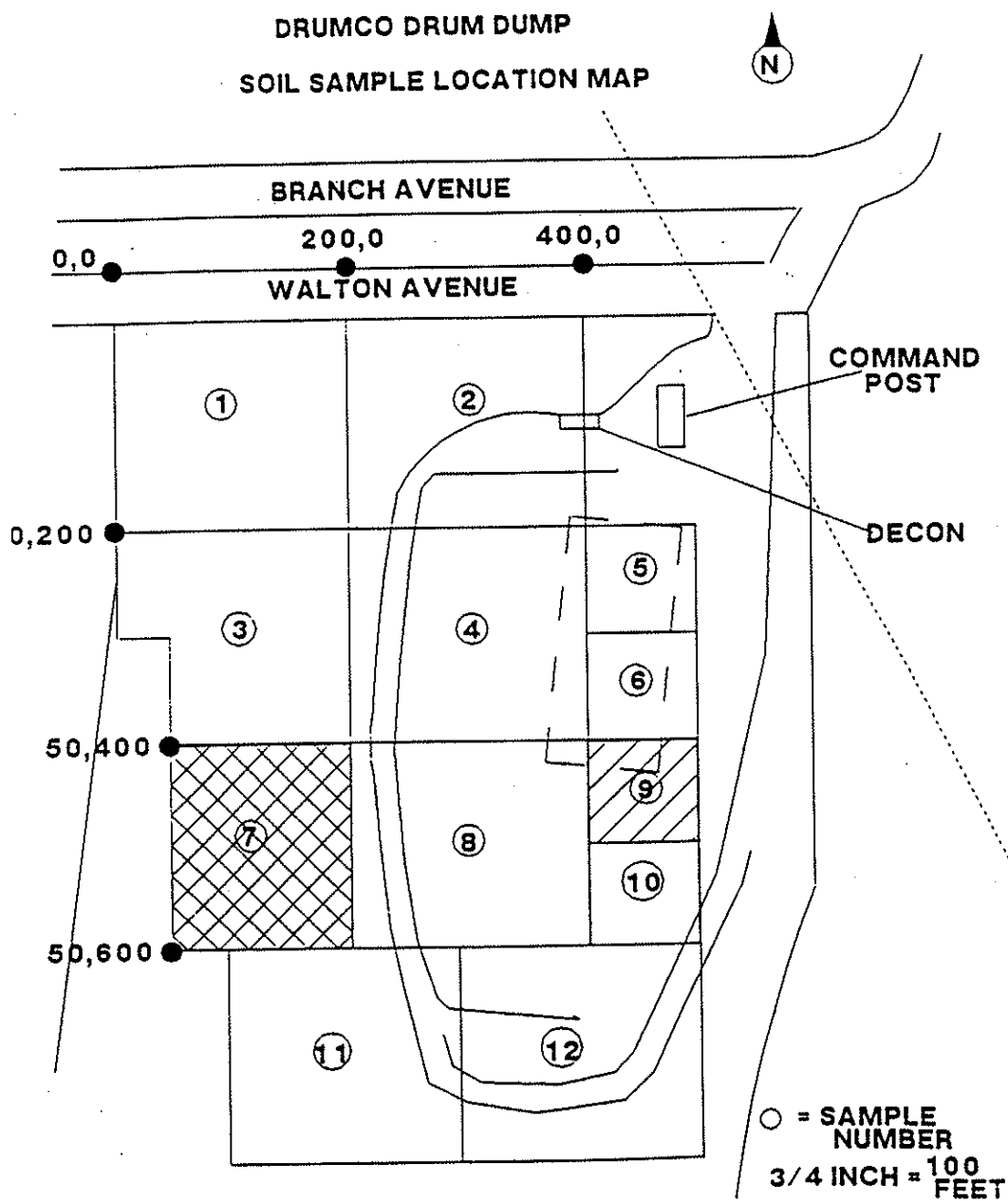


FIGURE 1 - SOIL SAMPLE LOCATION MAP

ORIGINAL
(Red)

APPENDIX C

bionetics

ANALYTICAL LABORATORIES DIVISION

18 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

REPORT OF ANALYSIS

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1430
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 1

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201207

TCLP (SW 846, Method 1311)

Inorganic/ 'Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP) (7760/6010)	< 0.01	5	02/14/92	1041	JID
ARSENIC (TCLP) (7060/6010)	< 0.01	5	02/14/92	1041	JID
BARIUM (TCLP) (7080/6010)	0.43	100	02/14/92	1041	JID
CADMIUM (TCLP) (7130/6010)	< 0.003	1	02/14/92	1041	JID
CHROMIUM (TCLP) (6010/7190)	< 0.01	5	02/14/92	1041	JID
MERCURY (TCLP) (7470/6010)	< 0.002	0.2	02/11/92	2010	PSC
LEAD (TCLP) (7420/6010)	0.09	5	02/14/92	1041	JID
SELENIUM (TCLP) (7740/6010)	0.02	1	02/14/92	1041	JID

RESPECTFULLY SUBMITTED.

(b) (4)



SEE REVERSE SIDE FOR EXPLANATION
OF SYMBOLS AND ABBREVIATIONS

bionetics

ANALYTICAL LABORATORIES DIVISION

18 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162ORIGINAL
(Red)

REPORT OF ANALYSIS

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1430
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 1

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201207

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
---------------------------------------	-----------------	----------------------	------------------	------	-----

CORROSIVITY RCRA
(SW1110)

6

02/06/92 1400 KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
--------------------------------------	--------------------------	-------------------------------	------------------	------	-----

CYANIDE
(SW 7.3.3.2)

<

1

250

02/10/92 1430 KWW

SULFIDE
(SW 7.3.4.1)

<

0.4

500

02/10/92 0930 KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
--	-----------------------	----------------------------	------------------	------	-----

FLASH POINT

*

0

02/17/92 1100 SOD

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(Red)

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02/18/92

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SAMPLING DATE - TIME: 02/03/92 - 1430
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SAMPLE ID: 1

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201207

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1245	PLW
NITROBENZENE	<	0.5	2	02/10/92	1245	PLW
PYRIDINE	<	0.5	5	02/10/92	1245	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1245	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1245	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1245	PLW
O-CRESOL	<	2.5	200	02/10/92	1245	PLW
P-CRESOL	<	2.5	200	02/10/92	1245	PLW
M-CRESOL	<	2.5	200	02/10/92	1245	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/10/92	1245	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/10/92	1245	PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1245	PLW

RESPECTFULLY SUBMITTED.

SEE REVERSE SIDE FOR EXPLANATION
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(b) (4)

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ANALYTICAL LABORATORIES DIVISION

18 RESEARCH DRIVE
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RECEIVED
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RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201207

TCLP (SW 846, Method 1311)

nic - latiles Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
L CHLORIDE	<	0.05	0.2	02/12/92	1822	PLW
DICHLOROETHYLENE	<	0.2	0.7	02/12/92	1822	PLW
ROFORM	<	0.2	6	02/12/92	1822	PLW
ON TETRACHLORIDE	<	0.2	0.5	02/12/92	1822	PLW
DICHLOROETHANE	<	0.2	0.5	02/12/92	1822	PLW
YLETHYLKETONE	<	0.2	200	02/12/92	1822	PLW
ENE	<	0.2	0.5	02/12/92	1822	PLW
HLOROETHYLENE	<	0.2	0.5	02/12/92	1822	PLW
ACHLOROETHYLENE	<	0.2	0.7	02/12/92	1822	PLW
ROBENZENE	<	0.2	100	02/12/92	1822	PLW
DICHLOROBENZENE	<	0.2	7.5	02/12/92	1822	PLW

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* NONE



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TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

REPORT OF ANALYSIS

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 1

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201207
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	17	%
	1600	mg/kg

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HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162**REPORT OF ANALYSIS**

02/18/92

ORIGINAL
(9)TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1447
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 2

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201208

TCLP (SW 846, Method 1311)

Inorganic/ (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JID
(7760/6010)		0.01	5	02/14/92	1041	JID
ARSENIC (TCLP)		0.91	100	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		0.003	1	02/14/92	1041	JID
(7080/6010)	<					
CADMIUM (TCLP)	<	0.01	5	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(6010/7190)						
MERCURY (TCLP)	<	0.01	5	02/14/92	1041	JID
(7470/6010)						
LEAD (TCLP)	<	0.02	1	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)						
(7740/6010)						

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SAMPLE ID: 2

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201208

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	6		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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ORIGINAL
(b)(4)

REPORT OF ANALYSIS

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b)(4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1447
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 2

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201208

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1330	PLW
NITROBENZENE	<	0.5	2	02/10/92	1330	PLW
PYRIDINE	<	0.5	5	02/10/92	1330	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1330	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1330	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1330	PLW
O-CRESOL	<	2.5	200	02/10/92	1330	PLW
P-CRESOL	<	2.5	200	02/10/92	1330	PLW
M-CRESOL	<	2.5	200	02/10/92	1330	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/10/92	1330	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/10/92	1330	PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1330	PLW



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HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162ORIGINAL
/R/

REPORT OF ANALYSIS

02/18/92

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RICHMOND VA 23227

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MATRIX: SOIL
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EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 2

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201208

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	< 0.05	0.2	02/12/92	1901	PLW
1,1 DICHLOROETHYLENE	< 0.2	0.7	02/12/92	1901	PLW
CHLOROFORM	< 0.2	6	02/12/92	1901	PLW
CARBON TETRACHLORIDE	< 0.2	0.5	02/12/92	1901	PLW
1,2-DICHLOROETHANE	< 0.2	0.5	02/12/92	1901	PLW
METHYLETHYLKETONE	< 0.2	200	02/12/92	1901	PLW
BENZENE	< 0.2	0.5	02/12/92	1901	PLW
TRICHLOROETHYLENE	< 0.2	0.5	02/12/92	1901	PLW
TET. CHLOROETHYLENE	< 0.2	0.7	02/12/92	1901	PLW
CHLOROBENZENE	< 0.2	100	02/12/92	1901	PLW
1,4-DICHLOROBENZENE	< 0.2	7.5	02/12/92	1901	PLW

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original & 2copies

* NONE

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ANALYTICAL LABORATORIES DIVISION

18 RESEARCH DRIVE
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TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

REPORT OF ANALYSIS

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 2

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201208
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	20.2	%
	1800	mg/kg

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TOLL FREE 1-800-695-2162

ORIGINAL
(Red)

02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1415

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 3

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201209

TCLP (SW 846, Method 1311)

Inorganic/ (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JID
(7760/6010)						
ARSENIC (TCLP)	<	0.01	5	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		1.07	100	02/14/92	1041	JID
(7080/6010)						
CADMIUM (TCLP)		0.005	1	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)		0.06	5	02/14/92	1041	JID
(6010/7190)						
MERCURY (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(7470/6010)						
LEAD (TCLP)		0.02	5	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)		0.02	1	02/14/92	1041	JID
(7740/6010)						

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(b) (4)



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bionetics**ANALYTICAL LABORATORIES DIVISION**

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(Red)

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SAMPLE ID: 3

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BAL LOG NO(s). 9201209

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	7		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SC



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3705 SAUNDERS AVE

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EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 3

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201209

TCLP (SW 846, Method 1311)

Organic - Semivolatile Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1415 PLW
NITROBENZENE	<	0.5	2	02/10/92	1415 PLW
PYRIDINE	<	0.5	5	02/10/92	1415 PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1415 PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1415 PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1415 PLW
O-CRESOL	<	2.5	200	02/10/92	1415 PLW
P-CRESOL	<	2.5	200	02/10/92	1415 PLW
M-CRESOL	<	2.5	200	02/10/92	1415 PLW
2,4,5-TRICHLOROPHENOL	<	0.5	2	02/10/92	1415 PLW
2,4,6-TRICHLOROPHENOL	<	0.5	400	02/10/92	1415 PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1415 PLW



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18 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

02/18/92

ENVIRONMENTAL TECHNOLOGIES ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL

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BAL LOG NO(s). 9201209

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/12/92	1939	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/12/92	1939	PLW
CHLOROFORM	<	0.2	6	02/12/92	1939	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/12/92	1939	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/12/92	1939	PLW
METHYLETHYLKETONE	<	0.2	200	02/12/92	1939	PLW
BENZENE	<	0.2	0.5	02/12/92	1939	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/12/92	1939	PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/12/92	1939	PLW
CHLOROBENZENE	<	0.2	100	02/12/92	1939	PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/12/92	1939	PLW

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* NONE



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TOLL FREE: 1-800-695-2162

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ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 3

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201209
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	18.1	%
	660	mg/kg

cc: Drumco site
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bionetics
ANALYTICAL LABORATORIES DIVISION

18 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE 1-800-695-2162

ORIGINAL
(Red)

02/18/92

ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1405
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 4

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201210

TCLP (SW 846, Method 1311)

Inorganic/ (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP) (7760/6010)	<	0.01	5	02/14/92	1041 JIL
ARSENIC (TCLP) (7060/6010)	<	0.01	5	02/14/92	1041 JID
BARIUM (TCLP) (7080/6010)	0.45	100		02/14/92	1041 JID
CADMIUM (TCLP) (7130/6010)	0.015	1		02/14/92	1041 JID
CHROMIUM (TCLP) (6010/7190)	<	0.01	5	02/14/92	1041 JID
MERCURY (TCLP) (7470/6010)	<	0.002	0.2	02/11/92	2010 PSC
LEAD (TCLP) (7420/6010)	<	0.01	5	02/14/92	1041 JID
SELENIUM (TCLP) (7740/6010)	0.05	1		02/14/92	1041 JID



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TOLL FREE: 1-800-695-2162

02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1405
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 4

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201210

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	6		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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ENVIRONMENTAL TECHNOLOGIES ANALYSIS
3705 SAUNDERS AVE
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MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1405

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 4

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201210

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1330	PLW
NITROBENZENE	<	0.5	2	02/10/92	1330	PLW
PYRIDINE	<	0.5	5	02/10/92	1330	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1330	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1330	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1330	PLW
O-CRESOL	<	2.5	200	02/10/92	1330	PLW
P-CRESOL	<	2.5	200	02/10/92	1330	PLW
M-CRESOL	<	2.5	200	02/10/92	1330	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/10/92	1330	P.
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/10/92	1330	PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1330	PLW



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EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 4

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201210

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/12/92	2020	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/12/92	2020	PLW
CHLOROFORM	<	0.2	6	02/12/92	2020	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/12/92	2020	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/12/92	2020	PLW
METHYLETHYLKETONE	<	0.2	200	02/12/92	2020	PLW
BENZENE	<	0.2	0.5	02/12/92	2020	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/12/92	2020	PLW
ETRACHLOROETHYLENE	<	0.2	0.7	02/12/92	2020	PLW
CHLOROBENZENE	<	0.2	100	02/12/92	2020	PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/12/92	2020	PLW

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ENVIRONMENTAL TECHNOLOGIES, ANALYSIS
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 4

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201210
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	15.3	%
	1100	mg/kg

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TOLL FREE: 1-800-695-2162

02/18/92

REPORT OF ANALYSIS

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1508
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 5--

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201211

TCLP (SW 846, Method 1311)

Inorganic/ (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JID
(7760/6010)						
ARSENIC (TCLP)		0.01	5	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		1.09	100	02/14/92	1041	JID
(7080/6010)						
CADMIUM (TCLP)	<	0.010	1	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)	<	0.01	5	02/14/92	1041	JID
(6010/7190)						
MERCURY (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(7470/6010)						
LEAD (TCLP)	<	0.01	5	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)		0.02	1	02/14/92	1041	JID
(7740/6010)						

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TOLL FREE: 1-800-695-2162ORIGINAL
(Red)

02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227
TO:
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1508
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 5

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201211

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	7		02/06/92	1400	KWw

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWw
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWw

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	S



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ENVIRONMENTAL TECHNOLOGIES, INC.
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SAMPLE ID: 5

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BAL LOG NO(s). 9201211

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1500	PLW
NITROBENZENE	<	0.5	2	02/10/92	1500	PLW
PYRIDINE	<	0.5	5	02/10/92	1500	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1500	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1500	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1500	PLW
O-CRESOL	<	2.5	200	02/10/92	1500	PLW
P-CRESOL	<	2.5	200	02/10/92	1500	PLW
M-CRESOL	<	2.5	200	02/10/92	1500	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/10/92	1500	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/10/92	1500	PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1500	PLW

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EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 5

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201211

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/12/92	2057 PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/12/92	2057 PLW
CHLOROFORM	<	0.2	6	02/12/92	2057 PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/12/92	2057 PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/12/92	2057 PLW
METHYLETHYLKETONE	<	0.2	200	02/12/92	2057 PLW
BENZENE	<	0.2	0.5	02/12/92	2057 PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/12/92	2057 PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/12/92	2057 PLW
CHLOROBENZENE	<	0.2	100	02/12/92	2057 F
1,4-DICHLOROBENZENE	<	0.2	7.5	02/12/92	2057 PLW

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* NONE



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02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC. **REPORT OF ANALYSIS**
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 5

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201211
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	15.7	%
	5900	mg/kg

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02/18/92

ENVIRONMENTAL TECHNOLOGIES, ANALYSIS
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1514
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 6

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201212

TCLP (SW 846, Method 1311)

Inorganic/ (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JID
(7760/6010)						
ARSENIC (TCLP)	<	0.01	5	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		0.84	100	02/14/92	1041	JID
(7080/6010)						
CADMIUM (TCLP)		0.019	1	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)	<	0.01	5	02/14/92	1041	JID
(6010/7190)						
MERCURY (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(7470/6010)						
LEAD (TCLP)		0.01	5	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)		0.02	1	02/14/92	1041	JID
(7740/6010)						



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ORIGINAL
(Red)

02/18/92

REPORT OF ANALYSIS

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

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SAMPLE ID: 6

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201212

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	7		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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ENVIRONMENTAL TECHNOLOGIES, INC. **REPORT OF ANALYSIS**
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SAMPLE ID: 6

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BAL LOG NO(s). 9201212

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/10/92	1545	PLW
NITROBENZENE	<	0.5	2	02/10/92	1545	PLW
PYRIDINE	<	0.5	5	02/10/92	1545	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/10/92	1545	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/10/92	1545	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/10/92	1545	PLW
O-CRESOL	<	2.5	200	02/10/92	1545	PLW
P-CRESOL	<	2.5	200	02/10/92	1545	PLW
M-CRESOL	<	2.5	200	02/10/92	1545	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/10/92	1545	P.
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/10/92	1545	PLW
PENTACHLOROPHENOL	<	2.5	100	02/10/92	1545	PLW

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3705 SAUNDERS AVE
RICHMOND VA 23227

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ATTN: (b) (4)

MATRIX: SOIL
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EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 6

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201212

TCLP (SW 846, Method 1311)

Organic - Volatiles (method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/12/92	2134	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/12/92	2134	PLW
CHLOROFORM	<	0.2	6	02/12/92	2134	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/12/92	2134	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/12/92	2134	PLW
METHYLETHYLKETONE	<	0.2	200	02/12/92	2134	PLW
BENZENE	<	0.2	0.5	02/12/92	2134	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/12/92	2134	PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/12/92	2134	PLW
CHLOROBENZENE	<	0.2	100	02/12/92	2134	PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/12/92	2134	PLW

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original & 2copies

* NONE

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18 RESEARCH DRIVE
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TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

02/18/92

ORIGINAL
REPORT OF ANALYSIS
ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 6

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201212
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	19.4	%
	2100	mg/kg

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TELEPHONE: (804) 865 0880
TOLL FREE: 1-800-695-2162

02/18/92

REPORT OF ANALYSIS

TO: ENVIRONMENTAL TECHNOLOGIES, ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1145
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 7

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201213

TCLP (SW 846, Method 1311)

Inorganic/ Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JID
(7760/6010)						
ARSENIC (TCLP)	<	0.01	5	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		0.44	100	02/14/92	1041	JID
(7080/6010)						
CADMIUM (TCLP)		0.012	1	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)		0.03	5	02/14/92	1041	JID
(6010/7190)						
MERCURY (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(7470/6010)						
LEAD (TCLP)		0.10	5	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)		0.03	1	02/14/92	1041	JID
(7740/6010)						

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bionetics**ANALYTICAL LABORATORIES DIVISION**

18 RESEARCH DRIVE
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TOLL FREE: 1-800-695-2162

02/18/92

ENVIRONMENTAL TECHNOLOGIES, ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227
TO:
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1145
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 7

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201213

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	6		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB



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SAMPLING DATE - TIME: 02/03/92 - 1145
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 7

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201213

TCLP (SW 846, Method 1311)

Organic - Nonvolatile (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	< 0.5	3	02/11/92	1415	PLW
NITROBENZENE	< 0.5	2	02/11/92	1415	PLW
PYRIDINE	< 0.5	5	02/11/92	1415	PLW
HEXACHLOROBUTADIENE	< 0.5	0.5	02/11/92	1415	PLW
2,4-DINITROTOLUENE	< 0.13	0.13	02/11/92	1415	PLW
HEXACHLOROBENZENE	< 0.13	0.13	02/11/92	1415	PLW
O-CRESOL	< 2.5	200	02/11/92	1415	PLW
M-CRESOL	< 2.5	200	02/11/92	1415	PLW
M-CRESOL	< 2.5	200	02/11/92	1415	PLW
2,4,6-TRICHLOROPHENOL	< 0.5	2	02/11/92	1415	PLW
2,4,5-TRICHLOROPHENOL	< 0.5	400	02/11/92	1415	PLW
PENTACHLOROPHENOL	< 2.5	100	02/11/92	1415	PLW

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ENVIRONMENTAL TECHNOLOGIES ANALYSIS
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1145
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 7

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201213

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Ir
VINYL CHLORIDE	< 0.05	0.2	02/13/92	0928	PLW
1,1 DICHLOROETHYLENE	< 0.2	0.7	02/13/92	0928	PLW
CHLOROFORM	< 0.2	6	02/13/92	0928	PLW
CARBON TETRACHLORIDE	< 0.2	0.5	02/13/92	0928	PLW
1,2-DICHLOROETHANE	< 0.2	0.5	02/13/92	0928	PLW
METHYLETHYLKETONE	< 0.2	200	02/13/92	0928	PLW
BENZENE	< 0.2	0.5	02/13/92	0928	PLW
TRICHLOROETHYLENE	< 0.2	0.5	02/13/92	0928	PLW
TETRACHLOROETHYLENE	< 0.2	0.7	02/13/92	0928	P
CHLOROBENZENE	< 0.2	100	02/13/92	0928	PLW
1,4-DICHLOROBENZENE	< 0.2	7.5	02/13/92	0928	PLW

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02/18/92

ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 7

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201213
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

850	ugcl/g
19.5	%
1200	mg/kg

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ENVIRONMENTAL TECHNOLOGIES, ANALYSIS
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1145

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 8

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201214

TCLP (SW 846, Method 1311)

Inorganic/ (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041	JIL
(7760/6010)						
ARSENIC (TCLP)	<	0.01	5	02/14/92	1041	JID
(7060/6010)						
BARIUM (TCLP)		0.25	100	02/14/92	1041	JID
(7080/6010)						
CADMIUM (TCLP)		0.021	1	02/14/92	1041	JID
(7130/6010)						
CHROMIUM (TCLP)		0.03	5	02/14/92	1041	JID
(6010/7190)						
MERCURY (TCLP)	<	0.002	0.2	02/11/92	2010	PSC
(7470/6010)						
LEAD (TCLP)	<	0.01	5	02/14/92	1041	JID
(7420/6010)						
SELENIUM (TCLP)		0.02	1	02/14/92	1041	JID
(7740/6010)						

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3705 SAUNDERS AVE

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MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1145

EXTRACT DATE - TIME: 02/05/92 -

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RECEIVED DATE: 02/04/92

BAL LOG NO(s) . 9201214

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	6		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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3705 SAUNDERS AVE
TO: RICHMOND VA 23227
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SAMPLE ID: 8

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201214

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/11/92	1500	PLW
NITROBENZENE	<	0.5	2	02/11/92	1500	PLW
PYRIDINE	<	0.5	5	02/11/92	1500	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/11/92	1500	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/11/92	1500	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/11/92	1500	PLW
O-CRESOL	<	2.5	200	02/11/92	1500	PLW
P-CRESOL	<	2.5	200	02/11/92	1500	PLW
M-CRESOL	<	2.5	200	02/11/92	1500	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/11/92	1500	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/11/92	1500	PLW
PENTACHLOROPHENOL	<	2.5	100	02/11/92	1500	PLW



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ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

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MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1145

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 8

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201214

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/13/92	1107 PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/13/92	1107 PLW
CHLOROFORM	<	0.2	6	02/13/92	1107 PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/13/92	1107 PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/13/92	1107 PLW
METHYLETHYLKETONE	<	0.2	200	02/13/92	1107 PLW
BENZENE	<	0.2	0.5	02/13/92	1107 PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/13/92	1107 PLW
ETRACHLOROETHYLENE	<	0.2	0.7	02/13/92	1107 PLW
CHL OBENZENE	<	0.2	100	02/13/92	1107 PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/13/92	1107 PLW

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02/18/92

ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 8

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201214
BAL W/O NO: 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	35.3	%
	1000	mg/kg

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02/18/92

REPORT OF ANALYSIS
ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1451

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 9

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201215

TCLP (SW 846, Method 1311)

Inorganic/ (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP)	<	0.01	5	02/14/92	1041 JID
(7760/6010)		0.01	5	02/14/92	1041 JID
ARSENIC (TCLP)		0.01	5	02/14/92	1041 JID
(7060/6010)		0.22	100	02/14/92	1041 JID
BARIUM (TCLP)		0.097	1	02/14/92	1041 JID
(7080/6010)		3.29	5	02/14/92	1041 JID
CADMIUM (TCLP)		0.002	0.2	02/12/92	2055 PSC
(7130/6010)		0.02	5	02/14/92	1041 JID
CHROMIUM (TCLP)		0.02	1	02/14/92	1041 JID
(6010/7190)					
MERCURY (TCLP)	<	0.002	0.2	02/12/92	2055 PSC
(7470/6010)		0.02	5	02/14/92	1041 JID
LEAD (TCLP)		0.02	1	02/14/92	1041 JID
(7420/6010)					
SELENIUM (TCLP)		0.02	1	02/14/92	1041 JID
(7740/6010)					



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REPORT OF ANALYSIS
ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
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MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1451
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 9

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201215

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	7		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	S



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REPORT OF ANALYSIS

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1451
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 9

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201215

TCLP (SW 846, Method 1311)

Organic - Semivolatile Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/11/92	0900	PLW
NITROBENZENE	<	0.5	2	02/11/92	0900	PLW
PYRIDINE	<	0.5	5	02/11/92	0900	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/11/92	0900	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/11/92	0900	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/11/92	0900	PLW
O-CRESOL	<	2.5	200	02/11/92	0900	PLW
P-CRESOL	<	2.5	200	02/11/92	0900	PLW
M-CRESOL	<	2.5	200	02/11/92	0900	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/11/92	0900	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/11/92	0900	PLW
PENTACHLOROPHENOL	<	2.5	100	02/11/92	0900	PLW

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BAL LOG NO(s). 9201215

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/13/92	1146	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/13/92	1146	PLW
CHLOROFORM	<	0.2	6	02/13/92	1146	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/13/92	1146	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/13/92	1146	PLW
METHYLETHYLKETONE	<	0.2	200	02/13/92	1146	PLW
BENZENE	<	0.2	0.5	02/13/92	1146	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/13/92	1146	PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/13/92	1146	PLW
CHLOROBENZENE	<	0.2	100	02/13/92	1146	1
1,4-DICHLOROBENZENE	<	0.2	7.5	02/13/92	1146	PLW

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ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 9

RECEIVED DATE: 02/04/92

BAL LOG NO(S). 9201215
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	27.9	%
	780	mg/kg

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ENVIRONMENTAL TECHNOLOGIES, INC. **REPORT OF ANALYSIS**
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1430
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 10

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201216

TCLP (SW 846, Method 1311)

Inorganic/ (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP) (7760/6010)	< 0.01	5	02/14/92	1041	JID
ARSENIC (TCLP) (7060/6010)	0.01	5	02/14/92	1041	JID
BARIUM (TCLP) (7080/6010)	0.11	100	02/14/92	1041	JID
CADMIUM (TCLP) (7130/6010)	0.025	1	02/14/92	1041	JID
CHROMIUM (TCLP) (6010/7190)	0.04	5	02/14/92	1041	JID
MERCURY (TCLP) (7470/6010)	< 0.002	0.2	02/11/92	2010	PSC
LEAD (TCLP) (7420/6010)	< 0.01	5	02/14/92	1041	JID
SELENIUM (TCLP) (7740/6010)	0.03	1	02/14/92	1041	JID



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bionetics**ANALYTICAL LABORATORIES DIVISION**

18 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1430

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 10

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201216

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	6		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
TO: RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1430
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 10

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201216

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/11/92	1545	PLW
NITROBENZENE	<	0.5	2	02/11/92	1545	PLW
PYRIDINE	<	0.5	5	02/11/92	1545	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/11/92	1545	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/11/92	1545	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/11/92	1545	PLW
O-CRESOL	<	2.5	200	02/11/92	1545	PLW
P-CRESOL	<	2.5	200	02/11/92	1545	PLW
M-CRESOL	<	2.5	200	02/11/92	1545	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/11/92	1545	PL
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/11/92	1545	PLW
PENTACHLOROPHENOL	<	2.5	100	02/11/92	1545	PLW



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02/18/92

ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1430

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 10

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201216

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/13/92	1227	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/13/92	1227	PLW
CHLOROFORM	<	0.2	6	02/13/92	1227	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/13/92	1227	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/13/92	1227	PLW
METHYLETHYLKETONE	<	0.2	200	02/13/92	1227	PLW
BENZENE	<	0.2	0.5	02/13/92	1227	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/13/92	1227	PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/13/92	1227	PLW
CHLOROBENZENE	<	0.2	100	02/13/92	1227	PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/13/92	1227	PLW

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* NONE



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ENVIRONMENTAL TECHNOLOGIES ANALYSIS

TO: 3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 10

RECEIVED DATE: 02/04/92

BAL LOG NO(s): 9201216
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	21.7	%
	1300	mg/kg

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REPORT OF ANALYSIS
ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE

TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1117

EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 11

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201217

TCLP (SW 846, Method 1311)

Inorganic/ (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP) (7760/6010)	< 0.01	5	02/14/92	1041	JID
ARSENIC (TCLP) (7060/6010)	0.01	5	02/14/92	1041	JID
BARIUM (TCLP) (7080/6010)	0.43	100	02/14/92	1041	JID
CADMIUM (TCLP) (7130/6010)	< 0.003	1	02/14/92	1041	JID
CHROMIUM (TCLP) (6010/7190)	< 0.01	5	02/14/92	1041	JID
MERCURY (TCLP) (7470/6010)	< 0.002	0.2	02/11/92	2010	PSC
LEAD (TCLP) (7420/6010)	0.10	5	02/14/92	1041	JID
SELENIUM (TCLP) (7740/6010)	0.02	1	02/14/92	1041	JID



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ORIGINAL
(b)(4)

02/18/92

ENVIRONMENTAL TECHNOLOGIES, INC. REPORT OF ANALYSIS
3705 SAUNDERS AVE
TO: RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

SAMPLING DATE - TIME: 02/03/92 - 1117

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SAMPLE ID: 11

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201217

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)		Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)		7		02/06/92	1400	KWW
Inorganic/ Reactivity (Method)		Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	<	1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	<	0.4	500	02/10/92	0930	KWW
Inorganic/ Ignitability (Method)		Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	*	0		02/17/92	1100	SUB



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ENVIRONMENTAL TECHNOLOGIES, INC. REPORT OF ANALYSIS

TO: 3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL

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SAMPLE ID: 11

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201217

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/11/92	1530	PLW
NITROBENZENE	<	0.5	2	02/11/92	1530	PLW
PYRIDINE	<	0.5	5	02/11/92	1530	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/11/92	1530	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/11/92	1530	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/11/92	1530	PLW
O-CRESOL	<	2.5	200	02/11/92	1530	PLW
P-CRESOL	<	2.5	200	02/11/92	1530	PLW
M-CRESOL	<	2.5	200	02/11/92	1530	PLW
2,4, -TRICHLOROPHENOL	<	0.5	2	02/11/92	1530	PLW
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/11/92	1530	PLW
PENTACHLOROPHENOL	<	2.5	100	02/11/92	1530	PLW



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ENVIRONMENTAL TECHNOLOGIES, INC.
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MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1117
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 11

RECEIVED DATE: 02/04/92
BAL LOG NO(s). 9201217

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis		
				Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/13/92	1317	PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/13/92	1317	PLW
CHLOROFORM	<	0.2	6	02/13/92	1317	PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/13/92	1317	PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/13/92	1317	PLW
METHYLETHYLKETONE	<	0.2	200	02/13/92	1317	PLW
BENZENE	<	0.2	0.5	02/13/92	1317	PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/13/92	1317	PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/13/92	1317	PLW
CHLOROBENZENE	<	0.2	100	02/13/92	1317	PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/13/92	1317	PLW

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* NONE



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02/18/92

REPORT OF ANALYSIS

TO: ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92

SAMPLE ID: 11

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201217
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	21.2	%
	2000	mg/kg

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original & 2copies



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02/18/92

REPORT OF ANALYSIS
ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1117
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 12

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201218

TCLP (SW 846, Method 1311)

Inorganic/ (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
SILVER (TCLP) (7760/6010)	< 0.01	5	02/14/92	1041	JL
ARSENIC (TCLP) (7060/6010)	< 0.01	5	02/14/92	1041	JID
BARIUM (TCLP) (7080/6010)	0.16	100	02/14/92	1041	JID
CADMIUM (TCLP) (7130/6010)	0.016	1	02/14/92	1041	JID
CHROMIUM (TCLP) (6010/7190)	0.02	5	02/14/92	1041	JID
MERCURY (TCLP) (7470/6010)	< 0.002	0.2	02/11/92	2011	PSC
LEAD (TCLP) (7420/6010)	0.02	5	02/14/92	1041	JID
SELENIUM (TCLP) (7740/6010)	0.04	1	02/14/92	1041	JID



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SAMPLE ID: 12

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201218

TCLP (SW 846, Method 1311)

Inorganic/ Corrosivity (Method)	Test Results	Regulatory Limits	Analysis Date	Time	Int
CORROSIVITY RCRA (SW1110)	7		02/06/92	1400	KWW

Inorganic/ Reactivity (Method)	Test Results mg/kg	Regulatory Limits mg/kg	Analysis Date	Time	Int
CYANIDE (SW 7.3.3.2)	< 1	250	02/10/92	1430	KWW
SULFIDE (SW 7.3.4.1)	< 0.4	500	02/10/92	0930	KWW

Inorganic/ Ignitability (Method)	Test Results °F	Regulatory Limits °F	Analysis Date	Time	Int
FLASH POINT	* 0		02/17/92	1100	SUB

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ENVIRONMENTAL TECHNOLOGIES ANALYSIS

3705 SAUNDERS AVE
RICHMOND VA 23227

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EXTRACT DATE - TIME: 02/05/92 -

SAMPLE ID: 12

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201218

TCLP (SW 846, Method 1311)

Organic - Semivolatile (Method)		Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
HEXACHLOROETHANE	<	0.5	3	02/11/92	1715	PLW
NITROBENZENE	<	0.5	2	02/11/92	1715	PLW
PYRIDINE	<	0.5	5	02/11/92	1715	PLW
HEXACHLOROBUTADIENE	<	0.5	0.5	02/11/92	1715	PLW
2,4-DINITROTOLUENE	<	0.13	0.13	02/11/92	1715	PLW
HEXACHLOROBENZENE	<	0.13	0.13	02/11/92	1715	PLW
O-CRESOL	<	2.5	200	02/11/92	1715	PLW
P-CRESOL	<	2.5	200	02/11/92	1715	PLW
M-CRESOL	<	2.5	200	02/11/92	1715	PLW
2,4,6-TRICHLOROPHENOL	<	0.5	2	02/11/92	1715	
2,4,5-TRICHLOROPHENOL	<	0.5	400	02/11/92	1715	PLW
PENTACHLOROPHENOL	<	2.5	100	02/11/92	1715	PLW

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TOLL FREE: 1-800-695-2162

02/18/92

ENVIRONMENTAL TECHNOLOGICAL ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227

TO:

ATTN: (b) (4)

MATRIX: SOIL
SAMPLING DATE - TIME: 02/03/92 - 1117
EXTRACT DATE - TIME: 02/05/92 -
SAMPLE ID: 12

RECEIVED DATE: 02/04/92

BAL LOG NO(s). 9201218

TCLP (SW 846, Method 1311)

Organic - Volatiles (Method)	Test Results mg/l	Regulatory Limits mg/l	Analysis Date	Time	Int
VINYL CHLORIDE	<	0.05	0.2	02/14/92	1014 PLW
1,1 DICHLOROETHYLENE	<	0.2	0.7	02/14/92	1014 PLW
CHLOROFORM	<	0.2	6	02/14/92	1014 PLW
CARBON TETRACHLORIDE	<	0.2	0.5	02/14/92	1014 PLW
1,2-DICHLOROETHANE	<	0.2	0.5	02/14/92	1014 PLW
METHYLETHYLKETONE	<	0.2	200	02/14/92	1014 PLW
BENZENE	<	0.2	0.5	02/14/92	1014 PLW
TRICHLOROETHYLENE	<	0.2	0.5	02/14/92	1014 PLW
TETRACHLOROETHYLENE	<	0.2	0.7	02/14/92	1014 PLW
CHLOROBENZENE	<	0.2	100	02/14/92	1014 PLW
1,4-DICHLOROBENZENE	<	0.2	7.5	02/14/92	1014 PLW

cc: Drumco site
original & 2copies

* NONE

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Water, Wastewater, Hazardous Waste, Industrial Hygiene and Chemical-Bacteriological Analysis

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TELEPHONE: (804) 865-0880
TOLL FREE: 1-800-695-2162

02/18/92

TO: ENVIRONMENTAL TECHNOLOGIES ANALYSIS
3705 SAUNDERS AVE
RICHMOND VA 23227
ATTN: (b) (4)

MATRIX: SOIL
SAMPLE DATE: 02/03/92
SAMPLE ID: 12

RECEIVED DATE: 02/04/92

BAL LOG NO(S). 9201218
BAL W/O NO. 9200159

TEST

EXTRACTABLE ORGANIC HALIDE
MOISTURE
OIL & GREASE

TEST RESULTS

<	2	ugcl/g
	14.5	%
	2000	mg/kg

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ORIGINAL
(Red)

APPENDIX D

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HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
FAX: 804-865-8014
TOLL FREE: 800-695-2162

REPORT OF ANALYSIS

TO:

(b) (4)

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND, VA 23227

05/27/92
(Report Date)

Client Sample ID: SOIL AREA 9
Location: DRUMCO DRUM DUMP
Matrix: SOIL
Sampled by: C CUSTOMER
Rec by lab: 05/20/92

BAL Log No: 9205671
BAL W/O No: 9200995
Sample Type: Grab
Grab Time: 05/18/92 1530
Composite Time:
from: N/A
to: N/A

TEST	METHOD	SAMP TYPE	TEST RESULTS	ANALYSIS			EXTRACTION	
				DATE	TIME	ANALYST	DATE	TIME
CHROMIUM	SW 846 7190/6010	GRAB	9140 mg/kg	05/26/92	1200	MS	N/A	N/A
CHROMIUM (TCLP)	6010/7190	GRAB	3.84 mg/l	05/26/92	1015	MS	N/A	N/A
MOISTURE	EPA 160.3	GRAB	36.3 %	05/26/92	1052	AMM	N/A	N/A

cc: Fax to Drumco; 410-354-18
Drumco Off; 410-354-1704
Suffolk Office, 2 copies



SEE REVERSE SIDE FOR EXPLANATION
OF SYMBOLS AND ABBREVIATIONS

RESPECTFULLY SUBMITTED,

(b) (4)

bionetics

ANALYTICAL LABORATORIES DIVISION

20 RESEARCH DRIVE
HAMPTON, VIRGINIA 23666
TELEPHONE: (804) 865-0880
FAX: 804-865-8014
TOLL FREE: 800-695-2162

REPORT OF ANALYSIS

TO (b) (4)

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND, VA 23227

05/27/92
(Report Date)

Client Sample ID: SOIL AREA 7
Location: DRUMCO DRUM DUMP
Matrix: SOIL
Sampled by: C CUSTOMER
Rec by lab: 05/20/92

BAL Log No: 9205670
BAL W/O No: 9200997
Sample Type: Grab
Grab Time: 05/18/92 1530
Composite Time:
from: N/A
to: N/A

TEST	METHOD	SAMP TYPE	TEST RESULTS	ANALYSIS			EXTRACTION	
				DATE	TIME	ANALYST	DATE	TIME
EXTRACTABLE ORGANIC HALIDE	SW 846 9020 MOD	GRAB	8.0 ugCl/g	05/26/92	1500	HAT	N/A	N/A

cc: Fax to Drumco; 410-354-18
Drumco Off; 410-354-1704
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REPORT OF ANALYSIS

TO:

(b) (4)

ENVIRONMENTAL TECHNOLOGIES, INC.
3705 SAUNDERS AVE
RICHMOND, VA 23227

05/27/92
(Report Date)

Client Sample ID: SOIL AREA 9 SPIKE
Location: DRUMCO MATRIX SPIKE
Matrix: SOIL
Sampled by: C CUSTOMER
Rec by lab: 05/20/92

BAL Log No: 9205672
BAL W/O No: 9200996
Sample Type: Grab
Grab Time: 05/18/92 1530
Composite Time:
from: N/A
to: N/A

TEST	METHOD	SAMP TYPE	TEST RESULTS	ANALYSIS			EXTRACTION	
				DATE	TIME	ANALYST	DATE	TIME
LEAD (TCLP)	6010/7190	GRAB	78.0 %	05/26/92	1015	MS	N/A	N/A

cc: Fax to Drumco; 410-354-18
Drumco Off; 410-354-1704
Suffolk Office, 2 copies



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RECEIVED AND SUBMITTED,
(b) (4)